

# American Aviation



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*The News Magazine of Air Transportation*

JAN. 1, 1949

## Freedom or Dole

ANOTHER year has come and gone and, if one judges the financial condition of the airlines by their 1948 profit and loss figures alone, the conclusion is rather inescapable that they have improved very little, if at all, over the previous disastrous year.

Yet the year 1948 has brought some very real and some very tangible improvements in sharpening of cost controls and procedures, particularly by those companies which in the past have demonstrated good business management of their affairs. If preliminary figures are an accurate reflection of progress in reducing the seat mile cost, there is reason to find encouragement ahead.

There is another achievement, also. Management which in 1945 and 1946 was planning for the moon, is now far more realistic in its approach toward air transport problems than it has ever been before. A year ago the postwar bubble had burst, but management had not yet reached the stage of grim reality toward pruning operating costs. Although much remains to be done to achieve additional efficiency and economy, 1948 marks a year of conversion to the reality of living within incomes.

But despite the progress this is no time for cheering. Some managements are confident they see a clear way ahead and are making whatever drastic moves they consider necessary to reach the blue sky. But more than one management is unhappy about the immediate future. Perhaps even more important is the concern being felt in some financial circles about the future of the air transport industry.

This concern is over the apparent increasing dependence of the airlines on the government for mail pay.

These financial people are asking: Is the air transport industry seeking a fool's paradise? Is the industry—or at least a sizeable part of it—seeking a place where one never goes bankrupt nor makes any money? Do the airlines really want a guaranteed existence, a sort of civil service employee's type of life, where security is assured unless one is proved dishonest and where the strong are held down to support the weak and the mediocre?

It is well that financial people are beginning to ask these questions because, in our opinion, both govern-

(Turn to Page 7)



### New President of Curtiss-Wright

William C. Jordan, vice president and general manager of Wright Aeronautical Corp. and former general manager of the Curtiss-Wright Airplane Division, has been elected president and director of C-W Corp. and Wright Aeronautical. Guy W. Vaughan, president of C-W since 1935 and president of Wright Aeronautical since 1930, is now chairman of the board of both firms. Jordan is a veteran of 24 years in aeronautical engineering and production.

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# Bendix Products

## AIRCRAFT FUEL METERING SYSTEMS



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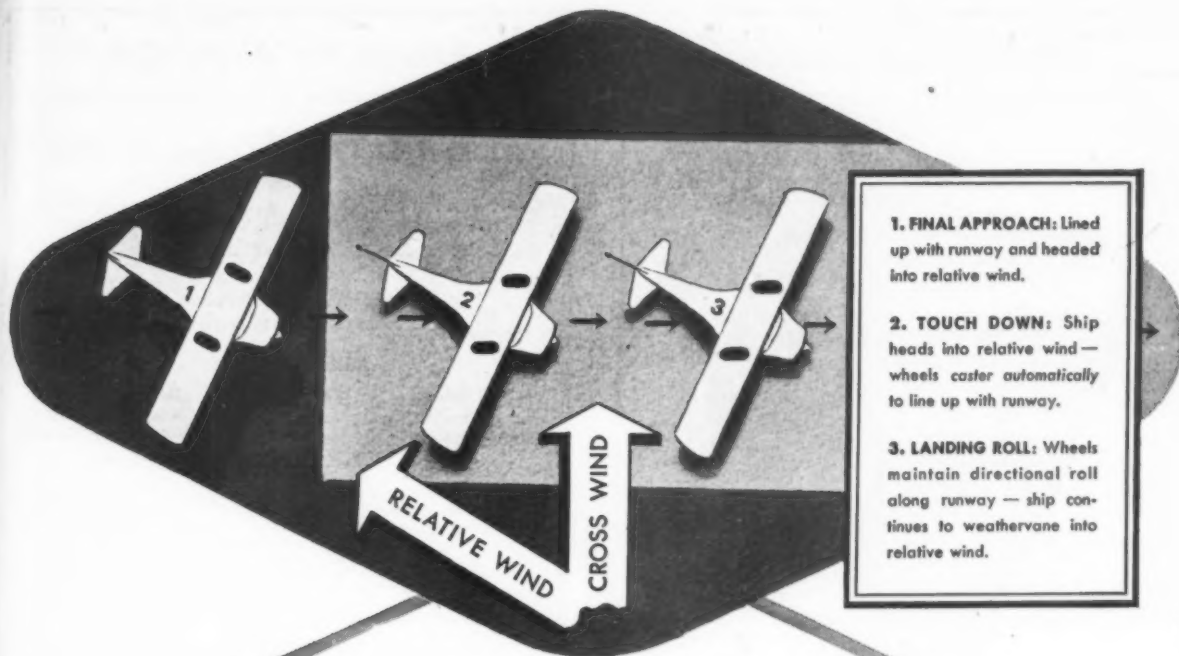
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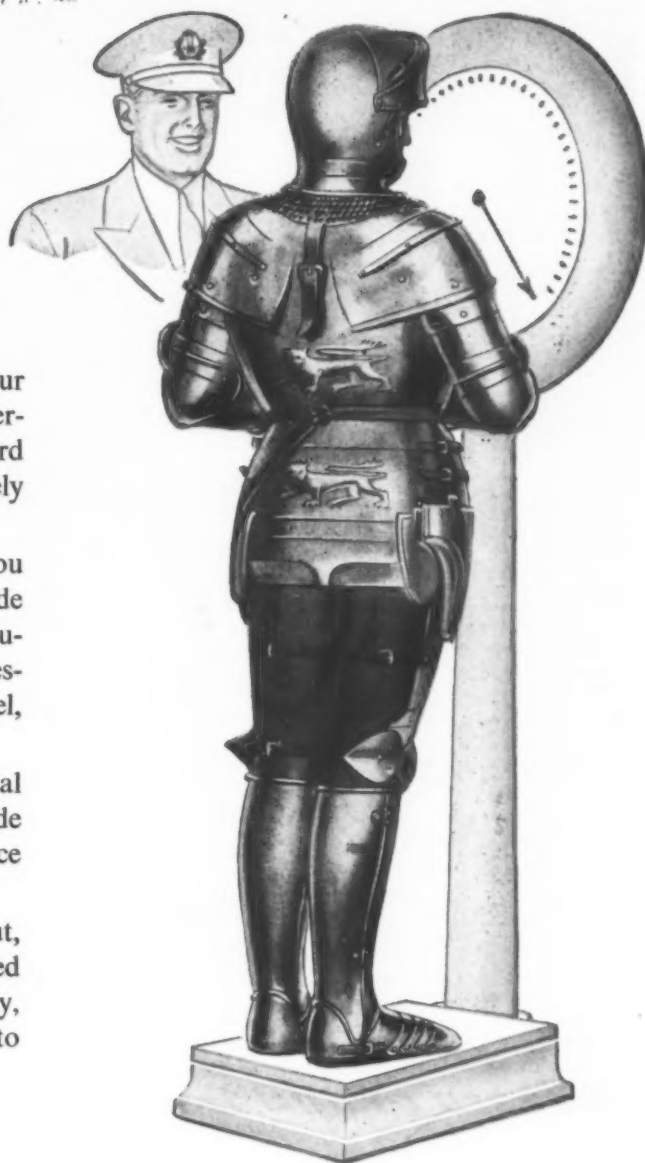
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- |                  |                         |
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# BOEING

AMERICAN AVIATION

## EDITORIAL

(CONTINUED FROM PAGE 1)

ment and industry must face the question of dependence in the near future and arrive at an answer. In one direction, the one toward which some companies are tending, is the direction of complete subservience to government and is but one minor step away from government ownership. In the other direction is a vigorous system of private enterprise with government regulation instead of government dictation.

It is a problem which should concern the government as well as management. It is very doubtful if the Civil Aeronautics Board has had the intention of developing an industry completely dependent upon it for its sustenance. It is also very doubtful that airline managements as a whole ever intended to end up as wards of government. Yet the actions of the CAB, unwittingly or not, and the current thinking of some airline managements, has created a situation that might well be diabolical, if the trend is continued. The lure of security is especially seductive to managements worn out by wrestling with rugged problems, and the lure of domination is ever-present among younger and minor bureaucrats, no matter what government they happen to be working for. The trend is toward a trap—the trap of subsidized dependence.

The road out of this trap is not easy nor is it altogether clear. Much depends on the one hand upon the statesmanship of the CAB in taking a long, bold look at the industry and determining what is reasonable mail pay and what is subsidy. And much depends on the other hand upon a far more aggressive, realistic and enlightened management that wants badly and seriously to be rid of the government dole. If the industry lacks any one thing above all today, it is genuine clear-thinking leadership.

It is not difficult to show now, that the majority of airlines are *not* subsidized, but the manner in which the CAB handles its mail pay puts virtually every airline in the country *automatically on a need basis*. There is no such thing as a standard pay for carrying the mail. There is no way for an airline to get rid of the tinge of subsidy until it is able to carry all the mail virtually for free. This system in itself is morally wrong and has led, in part, to the feeling that the entire industry is limping along on the dole.

On the other hand, the time can well come when the majority of airlines are in a subsidy class unless mail payments can be kept to within, say, 15% of total income. And this means constant striving to increase passenger and freight revenues and reduce expenditures.

This year of 1949 is vitally important and significant. The postwar dream period ended some time back. The year just past was a conversion to reality. From now on the majority of airlines must move into the black or the tinge of dependence may well become permanent. No one in his right mind wants to look forward to a life on the dole. Let everybody during 1949, from government to the lowest ranking airline employe, pull hard to get the industry back on the beam of economic independence.

### 'Justice' Without Charity

**A** FEW days before Christmas of 1947, Chief Pilot Charles Marthens of Arizona Helicopter Service flew his Bell helicopter into a roped-off area on the main street of Tucson, Arizona. To the immense joy of hundreds of children and townspeople, Santa Claus popped out of the machine with a bag of toys and Marthens flew back to his base. In due course the CAA filed a charge of reckless flying against Marthens. Some six months later an examiner heard the case and a year after the incident took place, in the midst of a new Christmas season which meant a lot of profitable flying for Marthens, his certificate was suspended for 30 days.

There may be some bits of evidence and circumstances which do not show up in the 112-page transcript of the hearing, but if one goes by the transcript and a very expressive editorial entitled "Bureaucratic Justice" in the *Tucson Daily Citizen*, it would seem that the CAB, which ordered the suspension, might have been somewhat more charitable than it was. There was no testimony at the hearing to indicate any carelessness and there was ample evidence that reasonable care had been taken in keeping the crowd at a safe distance, extension of insurance to cover property damage, and the like.

Perhaps a helicopter landing in a city street is not a safe operation, and we sympathize with CAA enforcement officials who have the unpleasant task of being policemen. But the fact remains that there is no regulation against helicopter landings in city streets and it seems to us that the CAA would be wise if it tempered its enforcement proceedings—and the CAB wise if it tempered its judicial action—with a little tolerance.

It is obvious that the Tucson incident stirred up the wrath of townspeople and city officials who cooperated with a local civic club to bring Santa Claus into the city. A Federal agency must use a certain amount of discretion in enforcement. If Arizona Helicopter Service had been previously warned against such landings, there is nothing in the transcript to show such warnings. All that appears is evidence that the CAA people themselves know little about helicopters. The suspension of a pilot's certificate for 30 days in his most profitable season and the cost of defending the complaint by the helicopter company seem to be a little rough.

WAYNE W. PARRISH

### Milestone

Hawaiian Airlines last month marked its 20th anniversary. It started as Inter-Island Airways with two eight-passenger amphibians and 12 employes. In two decades it has carried more than 1,500,000 passengers without a single passenger or crew fatality. Of the total, 1,000,000 passengers were carried in the last four years.



## Executive who never flew a plane before is on his way by *Bonanza* in 12 hours



"I don't know where this idea came from that you have to be a long-experienced pilot in order to be a Bonanza-businessman," declares Francis D. Wetherill, executive of John Wanamaker's, Philadelphia. "With no previous aviation experience,

I bought a Beechcraft Bonanza—and was on my way after only twelve hours of instruction. It's the plane—not me. I find it perfectly simple and easy to fly. And no investment I ever made paid me bigger dividends!"

"**Bonanza-businessmen**, as Mr. Wetherill calls them, have upset a score of traditions in their adoption of this fast, efficient, economical transportation," says Guy Miller of Wings Field, Inc., who delivered Mr. Wetherill's 4-place Bonanza and arranged his instruction. "The idea of a long and arduous period of 'learning to fly'—an idea that has kept all too many executives tied to surface transportation—has been thoroughly dispelled by the sound design and flying characteristics of the Bonanza."

### Bonanza travel can pay in your business, too!

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## BACKGROUND & TRENDS

**Sales Outlook for '49:** Top industry sales officials are encouraged by sales outlook for 1949, expect gains in passenger, cargo and mail volume, despite downward trend of overall travel market. (See page 11.) However, while need for advertising program directed at selling public on air transportation as a whole was emphasized by sales officials, funds to accomplish this end were not included in Air Transport Association's budget approved last month.

**Contrast:** While economy-minded directors of Air Transport Association disapproved a five-year advertising program with expenditures from \$500,000 to \$750,000 annually (proposed by the Air Traffic Conference), the Association of American Railroads is extending its \$995,000 space budget for magazine, business and farm publications unchanged into 1949. AAR, according to Advertising Age, is also spending \$1,180,000 for the 45-minute Monday evening ABC program, which began Oct. 1 for a period of 52 weeks.

**Simple Answer:** One airline executive has everything figured out very nicely. C. E. Woolman, president of Delta Air Lines, says that two more passengers on each flight on all airlines in 1947 would have made a \$3,000,000 industry profit for the year—instead of the 1947 industry loss of more than \$20 million. Same ratio probably holds for 1948. Just fill those seats—it's that simple.

**Marks of Success:** Traffic on Capital Airlines' Night-hawk coach service between Chicago and New York has been so good that the company on one night in mid-December operated no less than six sections eastbound, five sections westbound. DC-4's used on the flights have been modified to increase seating capacity from 59 to 60.

**War on 'Frills':** Western Air Lines' "no meal tariff," which would eliminate "free" meals on company's entire system and pass savings along to public by 5% fare reduction (see page 14), is just opening shot in war on "frills" designed to lower fares and attract more customers. Terrell C. Drinkwater, WAL's economy-minded president, hinted that WAL is contemplating other cost reductions that might be translated into cheaper tickets. Next moves might be elimination of reservations service on some flights and consolidation of ticket offices.

**Tighter Control:** Stricter enforcement of economic regulations and of the Civil Aeronautics Act is seen in three CAB moves last month. CAB (1) requested industry comments on decidedly more stringent rules for irregular passenger carriers (see page 16); (2) interpreted for first time in intelligible form just what it means by "regular" and "irregular" service; (3) removed enforcement from the Bureau of Law and made it a separate office responsible directly to Board itself. Still needed, however, are more enforcement personnel.

**Problems for CAB:** Proposed control of American Overseas Airlines by Pan American Airways dumps several policy questions in CAB's lap, including one never decided before—the value of the temporary seven-year certificates granted on July 5, 1945 to three trans-Atlantic carriers. Two pending cases directly affected are PAA's domestic route applications and the National dismemberment case in which CAB indicated PAA as likely candidate for NAL's New York-Miami route. A top CAB source has indicated that "expeditious" handling of the case may be expected.

**Mail Rate Action:** Responding to the need for faster mail rate action, CAB will attempt to get all "Non-Big Four" rate cases decided by Feb. 1, after which it will tackle Big Four applications. Temporary rates recently granted to several carriers have eased the financial crisis somewhat, still some of these gains have already been offset by increased costs. One of latter elements is flight engineer requirement on four-engined equipment, a sizable cost not included in recent rate awards.

**Good Safety Year:** Barring mishaps in last few days of the year, the 1948 airline safety record will show marked improvement from '47. Based on traffic estimates for November-December, passenger fatalities per 100,000,000 passenger miles dropped from 2.9 for all U. S. airlines (domestic and international) in 1947 to about 1.3 in '48. The domestic record will go down from 3.2 passenger fatalities per 100,000,000 passenger miles in '47 to 1.3 last year, while the international mark improved from 1.1 to 1.0.

**Old With New:** When new Congress convenes Jan. 3, most of clerical and technical committee staffs dealing with aviation legislation probably will be left largely intact. Many of them are holdovers from a previous Democratic regime; besides, technical consultants were placed beyond realm of political patronage by Congressional Reorganization Act. This situation is highly desirable to aviation interests generally, especially since all committees will now have new chairman, some of whom have been far removed from aeronautics. The holdover staffs which do much of planning and heavy committee work should provide understanding ears for airline and manufacturing interests.

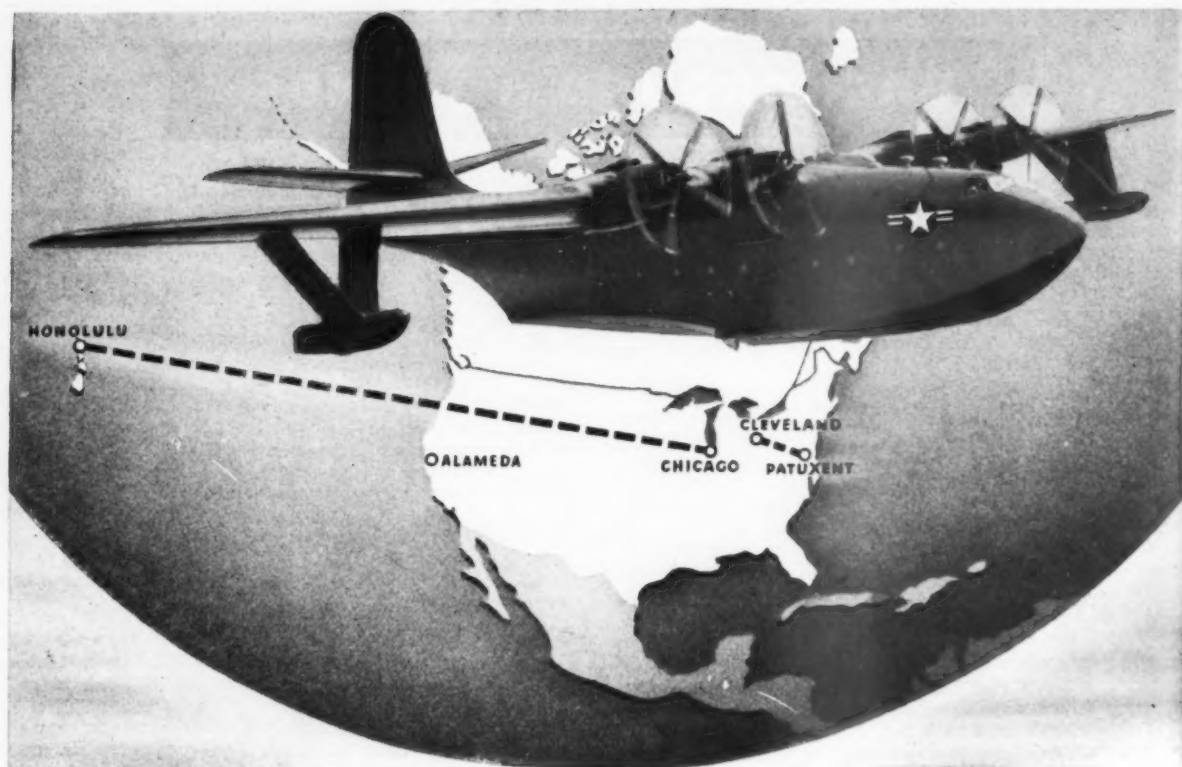
**Good News for Board:** Salaries as high as \$20,000 (twice present pay) may be recommended for CAB members by the Hoover Commission studying government reorganization. Government officials in the Board member category are definitely slated for not less than \$17,500 a year on the Hoover salary schedule.

**Manufacturing Profits:** The past year was a moderately good one for aircraft manufacturing industry, with total sales up more than a quarter billion dollars over 1947. Most large companies will report profits, but small earnings in most cases. In no instance was profit large enough to offset heavy losses sustained in 1946 and 1947. Estimated sales for 15 major firms totaled about \$1.1 billion in '48, largely due to increased military sales, although latest Air Force and Navy expansion programs are not yet reflected (See page 33).

**Congress Is Key to '49:** Manufacturing outlook for 1949 depends on Congressional action. If Congress votes appropriations to continue Air Force's 70-group and Navy's 14,500-plane program, the industry can look for contracts for more than 3,000 military units, which alone would assure profitable year. (Military aircraft produced in '48 totaled about 2,300.) While additional military expenditures may meet with some opposition, manufacturers on whole are optimistic about prospects for '49.

**Fairchild Bomber?** Fairchild Engine & Airplane Co., Hagerstown, Md., which recently re-entered the military trainer field against strong rivals, may pull another surprise and win out with a bomber one of these days. That's one company not to be under-estimated.

**Better Than Prewar:** While lightplane production last year dropped down to about 7,300 units or less than half of 15,515 for '47, it was still 10% better than the best prewar year—1941, when production totalled 6,597.



## Martin MARS Writes the Future of Seaplanes in Today's Navy Records\*

With a series of record-breaking flights, the Navy's new Martin JRM-2 Caroline Mars has refocused attention on the importance of seaplanes in modern military supply planning. And further emphasized the reputation of Martin flying boats for high performance, endurance and reliability! First the Caroline Mars cracked the non-stop seaplane record with a 4748-mile-flight from Honolulu to Chicago. A few days later, this mighty ship carried the highest airborne tonnage in history, flying 68,283 lbs. from Patuxent, Md., to Cleveland. Now, this latest Martin Mars is in service in the Pacific, regularly

carrying 39,000 to 40,000 lbs. over the 2,400 miles from Alameda, Cal., to Honolulu!

Said Vice Admiral John D. Price, Deputy Chief of Naval Operations: "Squadron VR-2 with its 145,000-lb. JRM-1 flying boats has provided outstanding evidence of the significant role which large flying boats can play in meeting the logistic needs of national defense. Requiring no prepared forward bases . . . the flying boats can provide air lift in large tonnage volume with efficiency and economy of operation and complete mobility as to bases. Carrying even larger loads than its sister ships, the Caroline Mars will provide an important boost to the total air lift available in the Pacific."

It's another Martin "first" . . . building air power to save the peace, air transport to serve it! THE GLENN L. MARTIN CO., BALTIMORE 3, MD.

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HONOLULU TO CHICAGO	Distance	Payload
	4748 miles (plus 42 crewmen and passengers)	14,000 lbs.
PATUXENT, MD. TO CLEVELAND	390 miles (longer than the Berlin air lift)	68,283 lbs.

# Martin

## AIRCRAFT

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## Broader Market Ahead:

# Airline Sales Officials See Higher Traffic Volume in '49

By KEITH SAUNDERS

Operations for the year 1948 are now a closed chapter in the history of the air transport industry. It is a chapter containing some elements of brightness and some of gloom. But it is past, and now a New Year lies ahead of the industry. What is the outlook for 1949? From the important sales standpoint will it be better or worse than the year just ended?

For an answer to these questions, AMERICAN AVIATION went direct to the top traffic and sales people in the industry. And to a man their answers were optimistic. Air transportation in 1949 should show traffic gains over 1948, they said, despite the general downward trend of the overall travel market.

Airline passenger traffic is expected to go up slightly—perhaps 2-3%, perhaps more—as a result of improved dependability and on-time performance of airline operations and a slanting of sales efforts toward development of new business.

Air cargo volume of domestic and international carriers—freight and express combined—reached an estimated volume of 143,000,000 ton miles in 1948, as compared to 97,568,958 in 1947, and the consensus is that it will go even higher in 1949.

Air mail volume, as a result of the first full year's operation of the air parcel post service, should also be up.

**Fear & Fare.** There is almost general agreement that there are no major new sales problems facing the industry this year, but the old sales problems—overcoming the traditional objections of "fear and fare"—will be attacked with greater vigor than ever before.

The big selling job facing the industry now is to convert to air travel the vast numbers of business and pleasure travelers now using other transportation media, including the automobile. There is a feeling on the part of some airline officials that 1949 advertising campaigns should feature more "industry selling"—that is, selling the public first on the idea of flying, and secondly on the selection of a particular airline.

It is felt that the old airline bugaboo of fear will be dissipated somewhat as the public is acquainted with recent

lines, said the results of present experiments with special excursion fares, coach-type fares and other such inducements designed to appeal to the mass market "will bear close scrutiny, as they may well become major factors in filling seats on weak segment; and during off seasons."

He said it is MCA's feeling that every effort should be made, economic consid-

erations permitting, to tap the vast mass market of potential air travelers that has hardly been touched.

"It may well be," Coburn said, "that our major (1949) sales effort will be concentrated on getting the confirmed surface traveler to try air travel—even if just for one trip."

Eastern Air Lines will continue to stress in its sales effort the advantages of air transport over surface means, said Stanley de J. Osborne, vice president-sales. Asserting that 1949 should be a better year than 1948, he said: "Success will

## Traffic Results for 1948

With final traffic figures not in for November-December, the Civil Aeronautics Administration in its year-end report, released this week, estimated that U. S. domestic and international scheduled airlines carried more passengers fewer revenue passenger miles in 1948 than in 1947. Passenger load factors were down six percentage points. Express and freight volume was up 47%. Here are CAA's figures:

	1947	1948
Revenue passengers—total	14,249,618	14,326,000
"    "—domestic	12,890,208	13,002,000
"    "—intl	1,359,410	1,324,000
Revenue pass. miles—total	7,913,971,000	7,768,000,000
"    "—domestic	6,103,879,000	5,898,000,000
"    "—intl	1,810,092,000	1,870,000,000
Pass. Load Factor—Total	63.59%	57.20%
"    "—domestic	64.12%	57.29%
"    "—intl	61.90%	54.98%
Ton Miles Express & Freight	97,568,958	143,000,000
Domestic	64,678,213	98,000,000
International	32,890,745	45,000,000

advances in air navigation aids, such as the Instrument Landing System. Also helpful in this respect should be the airlines' 1948 safety record. According to the Civil Aeronautics Administration's year-end report, the scheduled U. S. domestic and international air carriers chalked up a record of only 1.3 fatalities per 100,000,000 passenger miles flown last year, as compared to a fatality rate of 2.9 for 1947.

As to fares, there were indications at year's end that the fare situation, after several months of vacillation and confusion, was being stabilized, and this in itself was expected to be beneficial. Said R. E. S. Deichler, vice president-sales for American Airlines:

"Fares will be a major consideration in the development of business. We cannot price air transportation out of the market, which has been a tendency of the industry in the past. Obviously, the fare must be such that it will attract as great a number of people as is possible and at the same time bring in enough revenue to cover the costs of an efficiently operated company and, of course, produce a profit."

**Mass Appeal.** Hugh Coburn, vice president-traffic for Mid-Continent Air-

be assured if we remember we are competing with improved surface transport and do a better job than other systems do, and if we re-establish public confidence by prudent management and dependability in all of our activities."

The public, he added, must be impressed with "the vast strides our entire industry has taken in greater dependability, better handling and safer operation."

**Tourist Market.** Christopher de Groot, general traffic manager for Pan American-Grace Airways, said his company prefers to increase revenues in 1949 by increasing load factors, rather than fares, and will concentrate on selling more tourists on visiting South America on the theory that if the overall traffic can be increased "Panagra surely will get its share."

Northwest Airlines will go in for extensive promotional advertising this year and possibly for a tourist or second-class fare on some routes, according to R. O. Bullwinkel, vice president-traffic. He said NWA officials "are definitely of the opinion that the outlook for 1949 is brighter than 1948," and said the company's advertising appropriation for the



year will be greater than at any time in NWA's history.

Encouraged by a 100% gain in air freight volume in 1948 over 1947, United Air Lines will intensify its freight sales campaign this year, particularly with a view to correcting the disadvantageous directional cargo flow picture, now predominantly east to west. Harold Cray, v.p.-traffic and sales, said UAL's major sales efforts "on the passenger side, will be to penetrate new markets, to emphasize that your best dollar buy is an airline ride, and to capitalize on the increased dependability which we have built into our operations . . ."

Willis G. Lipscomb, v.p.-traffic and sales for Pan American Airways, foresees some increase in airline business this year over 1948, particularly in the cargo field.

"We believe," he said, "that the industry must at least hold the line on the fare level and that a broadening of the market will be accomplished only through the adoption of some device such as tourist-class service, for example, by which air transportation will be placed within the reach of larger numbers of people."

**Good Product, Right Price.** James W. Austin, vice president-traffic for Capital Airlines, feels the 1949 outlook is good but "the airlines must go out after new business instead of fighting each other for the people who already fly." He said the emphasis must be on converting people to a state of air-mindedness, and to this end Capital in 1949 will use a high-frequency newspaper advertising campaign, plus radio time and an increase in direct mail advertising.

"The airline business is the same as any other business; you must have a good product and you must put the right price on it," said Austin.

A possible 3 to 4% increase in domestic revenue passenger miles is foreseen by Laigh C. Parker, v.p.-traffic and sales for Delta Air Lines, who thinks the important thing for the industry to think about is "a more concerted effort to sell John Q. Public on the idea of flying, no matter what carrier he uses, and to back these efforts up with a well-financed, intelligently planned industry advertising program . . . We certainly can't get him on our line until he has been sold on the basic idea of flying."

Also looking for a better year in 1949 is T. M. Miller, general traffic and sales manager for Chicago and Southern, who foresees a more stable national economy in which the C&S sales staff "can most effectively apply its energy, ability and aggressiveness to the full development of the air traffic potential of our routes."

**Trend Upward.** "I think the trend is toward a better than average increased public acceptance of air travel in '49 as compared with '48," said Stanley O. Halberg, general traffic and sales manager of Continental Air Lines, while George F. Scott, general sales manager



**Kitty Hawk at Home**—After two decades in England, the Wright Brothers' "Kitty Hawk" was formally presented to the Smithsonian Institution in Washington, D. C., on Dec. 17—the 45th anniversary of the craft's first flight. Leading government and military officials participated in the ceremony. The plane is suspended in the place of honor in the North Hall of the Institution, immediately in front of Lindbergh's "Spirit of St. Louis." Acceptance speech was made by Vice President-Elect Alben W. Barkley.

for Northeast, foresees a more favorable trend for his company if the economic condition of the country remains at a reasonable level.

And Richard A. Dick, v.p.-traffic and advertising for Western Air Lines, is "looking forward to a better year in 1949 with some 'assists' we hope from the elimination of the 15% transportation tax and a clearer definition of where American business stands under policies of the re-elected administration."

Western's 1949 sales program, he said, sets down a specific blueprint for reaching the "would-be—if" travelers on the airlines and still keeps a sharp "weather-eye" on any traffic diversion aspects.

All in all, the response to this survey shows that the nation's airlines are now taking a more realistic view of their situation, have a keener consciousness than ever before of the importance of fares, and are determined to bend every effort toward a broadening of their market this year.

### 'Postwar' DC-3 Proposed

Douglas Aircraft Co. is now circulating a proposal among some of the airlines which, if adopted, would enable them to make postwar transports from their DC-3's for the additional price of from \$150,000 to \$200,000 each. This program would insure that the workhorse of the transport industry would remain on the scene in scheduled operations for many years to come, regardless of the transport category requirements of CAA.

Douglas proposes to take the airplanes now in use back to the factory for major modification including the installation of a higher powered engine, addition of five seats, incorporation of a built in loading ramp, boosting of the gross take off weight allowance and

aerodynamic structure changes. In the process of these changes the aircraft will be made to comply with CAA's T-category requirements, the empty weight of the airplane will be stabilized at approximately 18,014 pounds, and the airplane operating costs would level out at 39c per airplane mile in a 200-mile range configuration or at 35c for a 400-mile range.

Although the airplane mile costs have not changed much from the industry average for 1947, the addition of 5 seats decreases seat mile cost by about 21% and the aerodynamic and power changes bring about increase in speed of about 50 miles per hour. In addition, the increased seating capacity boosts the available seats to a level where the plane will be able to handle loads paralleling the load factors on the DC-4 during 1947-48. This will permit full pay loads on DC-3 airplanes with the same traffic which has kept load factors in the larger equipment below a paying level.

**Cabin Changes.** The forward bulkhead of the cabin would be moved to a point just aft of the pilot's seats. The radio equipment would be on the left side of the airplane just aft of this bulkhead while the lavatory would be on the right side in this area. An open doorway leads from the forward compartment into the passenger cabin. The increase in seating capacity is obtained by use of four seats on each side, facing into the aisle.

Power for the new airplane would be provided by Wright 1820 engines of the C9-HE series. These are nine-cylinder engines producing 1475 horsepower. These engines are very much like those used by Chicago and Southern Air Lines in its DC-4 airplanes.

Maximum gross take-off weight would be boosted to 26,900 pounds.



# PAA-AOA Deal Requires Major U. S. Policy Decision

By ERIC BRAMLEY

The Civil Aeronautics Board had before it as the new year opened one of the biggest and most surprising deals in air transport history—the proposed acquisition of the assets of American Overseas Airlines by Pan American Airways (AMERICAN AVIATION, Dec. 15, 1948).

The proposal involves PAA acquiring the AOA assets in exchange for PAA stock. American Airlines owns 1,083,154 shares, or 62%, of AOA.

Whether CAB, and eventually President Truman, will approve the plan remains to be seen. It would result in two rather than three U. S. Atlantic operators, and whether this would be considered a major change in U. S. policy also remains to be seen. PAA, AOA, and TWA were awarded temporary seven-year certificates on July 5, 1945.

The deal is said to have been first proposed in a letter from John W. Hanes, New York investment banker, one-time Assistant Secretary of the Treasury and until several months ago a PAA director, to Charles S. Cheston, a director of American Airlines. The ensuing negotiations were strictly top-level, headed by PAA President Juan T. Trippe and C. R. Smith, AA board chairman and AOA president. Few others knew what was coming.

It was evident that at least one other party, American Export Lines, was not happy. Export, holder of 355,708 shares, or 20.3% of AOA, apparently refused to have anything to do with the plan. John E. Slater, executive vice president of the steamship company and one of the most energetic opponents of the single-company chosen instrument policy, resigned as chairman of the AOA board on Nov. 19. He remains as a director.

**Policy Reversal.** For American Airlines, the deal represented a complete reversal of policy. AA officials had been active in numerous international civil aviation conferences, and they had opposed the chosen instrument. Reasons for the AOA decision were given by C. R. Smith as "slow revival of normal trade and commerce between the U. S. and Europe; the fact that foreseeable volume of business does not justify the continuation of three competing U. S. carriers on the North Atlantic route; the increased subsidy which will be required to sustain three carriers; and the difficulty of securing the additional capital which will be required for the future."

Trippe asserted that foreign airlines have increased the proportion of traffic carried by them more than 50% during the past year. "As a result of the merger, important operating economies would be effected," he said. "The financial position of the carriers would be strengthened,

and the opportunity of preserving a fair share of future North Atlantic air traffic under the American flag would be greatly improved."

Briefly, the proposed plan is as follows: AOA assets will be transferred to PAA, in exchange for PAA stock. This stock will be distributed by AOA to its stockholders, and AOA will be dissolved. American, owning 62% of AOA, will then become a large stockholder in PAA. However, it has no plan to take part in management of PAA, and the stock received by it will be placed in a voting trust until ultimately sold to the public or distributed to AA stockholders.

PAA's capitalization consists of 6,145,082 shares out of 10,000,000 authorized. It has a \$40,000,000 bank credit and has plans for borrowing \$10,000,000 more.

American is assured of receiving, in terms of PAA stock, not less than it paid for its 62% interest in AOA. The 1,083,154 AOA shares were acquired by AA at an average cost of \$10.77 per share. Agreement is that this amount or the net book value of AOA as of Dec. 31, 1948, whichever is the larger, shall be paid for in PAA stock, also figured at its net book value as of Dec. 31, 1948. According to unaudited balance sheets of last Sept. 30, AOA's net book value was slightly under \$10 a share, while PAA's was about \$13.90. Final determination will be affected by any mail pay awards.

**Speedy Handling.** Both PAA and AOA stockholders must approve the proposal. They would meet within 45 days of CAB's approval of the deal.

An important part of the deal involves Boeing Stratocruisers. PAA will acquire the eight planes on order by AOA. PAA has 20 on order, and the acquisition will give it a total of 28. BOAC and SAS, also operating on the Atlantic, have Stratocruisers on order. AOA is certificated to the three Scandinavian capitals, London, Shannon, Amsterdam, Helsinki, Frankfurt and Berlin. The certificate also includes Moscow, but with the present state of U. S.-Russian relations, there is little likelihood of the route being operated in the foreseeable future. PAA flies to Shannon, London, Brussels, Frankfurt, Prague, and on to Calcutta via a temporary Mediterranean route. Its Balkan route has been impossible to operate.

The deal, if approved, will be an unhappy ending to American Export Lines' attempts to augment its Mediterranean steamship service with an air route. It was certificated to Lisbon before the war, after a bitter struggle with PAA, but could not operate because of the hostilities. In 1944, American, enthusiastic about international air traffic

prospects, bought 51.4% of American Export Airlines, later increasing the holdings. CAB approved the control when it issued the three Atlantic certificates in 1945.

The company's name was changed to American Overseas Airlines and thrice-weekly service opened to London on Oct. 23, 1945. By the following January daily flights were being operated and since then traffic has gone up steadily. In the first half of 1948, 27,427 passengers were carried, against 33,181 for TWA and 56,441 for PAA, the latter including Bermuda and Africa.

In the first nine months of 1948, AOA had net income of \$742,932, and additional mail pay has been awarded since.

**Reasons for Withdrawal.** According to AA officials, the company's decision to withdraw from Europe was brought about because it cannot foresee profitable operation of AOA without heavy government mail pay. Traffic, while good, has been disappointing if temporary political and military travel is discounted. With this travel destined to end sometime, and with a route structure dead-ending in Helsinki, AA has been unable to visualize any substantial civilian and business traffic for the AOA routes for some time in the future.

In addition, AA discovered that AOA was not proving to be a major feeder to its domestic system, and that AA management was having to spread itself thin to handle foreign responsibilities.

AA wants to eliminate subsidy as completely as possible, something that seemed impossible to do with AOA. With the coming of the Stratocruisers, heavy expenditures would be required. The company did not decide to give up its foreign outlet without exploring the prospects of enlarging it to a size sufficient to go beyond the subsidy level. Both AA and PAA wanted to acquire TWA's international routes, but both failed. When AA first took steps to enter the foreign field, it did so on the assumption that there would be two, rather than three, Atlantic operators. Now, being unwilling to continue as a third party in what it considered to be a two-company deal, AA decided to bow out.

## Wholesale Interchange

G. T. Baker, president of National Airlines, impatient with the slowness with which the air transport industry was moving toward the practice of equipment interchange, last month tossed into the lap of the Civil Aeronautics Board an interchange proposal such as had never been seen before.

What Baker proposed was that CAB throw open NAL's routes for the planes of all connecting carriers, Panagra, Delta, Braniff, Eastern, Colonial, Pan American, Chicago & Southern and Mid-Continent, and open the routes of all these carriers to National's planes. Instead of passengers, mail, freight and express changing

planes at key junction cities, the planes would continue on over the routes of other carriers.

If approved by the Board, this plan of Baker's would set a precedent for widespread extension of through-plane service by means of equipment interchange throughout the United States and the Western Hemisphere.

Saying he would seek an early meeting with CAB members to discuss the proposal informally, Baker said the plan is "right in line with the oft asserted policy of the CAB to foster and encourage improved service without further route grants at this time," and added that it "will accomplish directly what the Board has been trying to do in a round-about way for some time."

"National is not offering an innovation," Baker said. "Several recent interchange agreements are reportedly working out satisfactorily. We only urged a broad scale application of the plan. The Board has the opportunity to cut across the years and accomplish sweeping progress almost overnight."

"It seems to me," he continued, "that equipment interchange agreements providing through service without change of plane between major cities is in the public interest when justified by available and potential traffic. This, coupled under certain conditions with coach fares, would, I believe, provide the revenues so urgently needed by all airlines."

The NAL executive called for airline support in steering the plan through the Board "in record time," declaring: "This is an opportunity for the industry to cooperate in a new, sound trend. . . ."

Whatever the industry might think of the Baker plan, there was no denying the fact that it was a bold and interesting proposal.

## NAL Asks Case Dismissal

National Airlines on Dec. 21 asked CAB to dismiss the National Dismemberment Case, arguing four main points:

(1) CAB lacks legal authority to order the actions contemplated by the investigation.

(2) The Board does not have legal authority to conduct the investigation.

(3) Continuation of the investigation is contrary to the public interest.

(4) The initiation and further continuation of the proceeding seriously impairs NAL's ability and effort to improve its financial position.

**Transocean in China:** International Refugee Organization has contracted with Transocean Air Lines, of Oakland, Calif., for the transportation by air of 13,000 Europeans from Shanghai to the safety of western Pacific areas, the airline has announced. Company officials said they would use 10 C-54's for the project. Approximately 150 company personnel, including pilots, will be assigned to the operation.

# WAL Eliminates Free Meals, Cuts Passenger Fares 5%

Are free meals aloft an "unnecessary frill" in the air transport industry, or are they a necessary and integral part of airline service? The industry as a whole has long held to the latter position, even in the face of heavy financial losses and sharp criticisms for alleged extravagances, but the united front was finally broken last month.

Western Air Lines, which on May 26, 1928 started the free airline meals practice on its Los Angeles-San Francisco route, on Dec. 10 filed with the Civil Aeronautics Board a "no-meal tariff" eliminating the costs of food service from the fare structure and passing the 5% saving along to the traveling public. The tariff would be effective Jan. 1, if approved by CAB.

Said Terrell C. Drinkwater, WAL president:

"Since we were the first airline to offer 'free meals,' it is perhaps appropriate that we are the first to take them off. We think that the utility of air transportation has been realized by a sufficient number of people so that today we don't have to resort to giving away dishes, nylons or meals to get people to fly. We think the public today is more interested in savings in fares than they are in 'free' food. It will be good to get out of the restaurant business and be able to concentrate our energies on safe, efficient, dependable transportation."

**Eat or Save.** Elaborating further on the philosophy behind the no-meal tariff, Drinkwater said Western is not cutting fares in the sense that the net return to the line from a ticket sale will be reduced.

"The net yield will be the same," he said. "We are merely eliminating the cost of meals from the price of our tickets and passing this saving along to the public. . . . Distances between cities flown by Western Air Lines are such that no one is going to suffer from starvation. We will provide access to good airport restaurant facilities for both the long-haul and the short-haul passenger, so that if he is hungry he can buy himself a meal on the ground. If he is not hungry, he can pocket the fare saving."

Showing how it had arrived at the 5% saving figure, Western filed with CAB a statement of its food service and related costs for the first 10 months of 1948. Items included: \$229,906 for food and catering service; \$48,808 for salaries of personnel directly or indirectly involved in food service; \$25,288 for supplies, maintenance and replacement of food service equipment, such as spoons, trays and cups; and \$17,481 for miscellaneous overhead.

Total food service costs added up to \$339,733 or 5.235% of total passenger revenues for the 10-month period.

Drinkwater apparently had given a lot of thought to the matter, for he supplied considerable data relating to meal service aloft. About 46% of the passengers carried each day on the WAL system are offered free meals, he said, about 25% of them don't eat the meals because they are not hungry.

**54% Pay for Others.** "There are about 15,500 such meals served by Western each month at a considerable cost to the company and to the passenger, for obviously the cost of these meals must be included in the price of the ticket," explained Drinkwater.

"One of the big difficulties is that the 54% of our passengers who don't have meals served them en route pay the same price for their ticket as is collected from the 46% who are served meals. The same is true of those who ride on meal flights but don't eat. Thus, about two-thirds of our passengers buy meals for the one-third who eat them." This inequity would be corrected under the proposed new tariff, he added.

As an experiment, Western had at three points on its system fed the passengers on the ground while the aircraft was being loaded, serviced and fueled, and found that the method met with "a great deal of popular response."

"People like to get out of the airplane anyway to stretch their legs and seem quite happy about selecting from the menu whatever they may wish and eat the meal on the ground rather than in the air," said Drinkwater, adding that, "Of course, in the air it is impossible to put a meal on any airplane which will satisfy the individual whims and tastes of forty passengers, or even a good percentage of forty passengers."

Declaring that the serving of meals is not a proper function of the airlines nor their responsibility, Drinkwater said: "No other transportation system gives away 'free' meals, and why should we?"

It was an interesting question, and one to which no answer could be provided, save through an actual trial. Whether Western would be allowed to make this trial depended on whether CAB would approve the no-meal tariff. And even then the larger airlines, particularly the transcontinentals, might well claim that experience on WAL's system might not apply on their routes.

**TWA to Zurich, Geneva:** TWA has been authorized to serve Zurich and Geneva in lieu of Berne, Switzerland. CAB approved a change in service plan to permit the substitution.

## MAIL PAY

## Help for TWA

The Civil Aeronautics Board last month proposed for TWA's international division a new rate which would give the carrier a lump sum payment of \$8,542,000 for the period Jan. 1, 1948, through Nov. 30, 1948, inclusive of payments received under its previous temporary rate which provided a lump sum payment of \$2,035,000 for the period Jan. 1 through Apr. 30 and a 60c per airplane mile rate thereafter. In addition, the plane mile rate after Nov. 30 would be 85c instead of 60c.

The new rate would give TWA an estimated \$2,512,000 additional in international mail pay for the first 11 months of 1948, this being the approximate difference between the amounts actually received under the previous temporary rate and those proposed under the new rate.

The Board stated that it had re-analyzed TWA's operating results and found that its 1943 mail pay requirements might reasonably be expected to be substantially higher than the temporary rate set earlier in the year. It said TWA's financial condition is "still critical," and that it "will be in the public interest" to increase its temporary mail rates for the year.

The increase would go a good way toward wiping out the approximately \$2,900,000 loss incurred on TWA's international routes in the first three quarters of 1948.

## NWA 'Over-Equipped'

CAB also proposed to take Northwest Airlines out of the "Big Five" group for mail rate purposes and to give it a higher temporary mail rate, but along with the offer of increased mail pay went sharp words addressed to NWA management.

Currently being paid under a temporary sliding scale rate set in the initial phases of the "Big Five" rate proceeding, Northwest has been getting a yield of about 9c per airplane mile, which was greater than the yield of any of the "Big Five" carriers but still was inadequate in relation to its needs.

The new rate would yield the carrier an estimated 14c per plane mile on the basis of 60,000 daily miles of domestic operations and would raise NWA's 1948 mail revenues from approximately \$1,523,000 to about \$2,287,000.

Major reason given for taking Northwest out of the "Big Five" class was "an increasing disparity between the traffic density of NWA and the Big Four."

CAB said that "since the sharp decline in Northwest's passenger load factor has resulted from the increased capacity operated during the period of declining traffic volume, the frequencies operated by the carrier may be in excess of the schedules required in the interest of the



**BOAC Management Committee**—Sharing the bouquet recently handed the Western Division (North Atlantic) of British Overseas Airways Corp. by a top official sent from London to investigate division operations are these members of the unit's management committee. From left to right, are Group Captain G. S. McDougall, special representative, Canada; Paul E. Bewshea, sales manager; H. Clyde Purnell, traffic superintendent; Eric Wakeford, accountant; G. A. W. Wynne, public relations; Erik Nelson, deputy general manager; Vernon G. Crudge, general manager; Charles Abell, line manager; J. Ross Stainton, administration manager; Alstair Thomson, deputy sales manager; Peter Ball, secretary.

objectives of the Act.

"In addition to excess depreciation on the basis of accelerated service lives, the sharp increase in the size of Northwest's fleet and the recent sharp reduction in aircraft utilization . . . indicates that Northwest is presently over-equipped in relation to the required capacity for the recent traffic volume."

## Advice From Old-Timer

Old-timer S. A. (Steve) Cisler, retired since 1939 but still keenly interested in the air mail system he had played so large a part in developing, decided last month he didn't like the way things were going. In a letter to W. A. Patterson, president of United Air Lines, Cisler spoke his mind.

"As you know," he wrote, "I was head of the Air Mail Service under government-operated as well as contract air mail service . . .



Steve Cisler

I was not in favor of cancellation of the mail contracts in 1934 . . . a few years ago I wrote Mr. (Harliee) Branch of the CAB that some policies needed further study and remedial action. I especially emphasized the danger in creating so much competitive mileage and establishing feeder lines."

He said if the CAB has authority to

control air services, then it should act to reduce, if not entirely eliminate, uneconomical competition in the air transport industry. He said he had suggested that the Board should encourage merger of some of the small companies with the large trunk lines, resulting in more economical management.

"Undoubtedly," he declared, "five or six companies can develop an air service needed for National Defense, but the 'barnacles' should be reduced or liquidated . . . The trunk lines with sufficient schedules could serve many of the feeder line stops with but little and in some cases no increase in mileage. There are many instances in the present setup where considerable mileage could be saved without material injury to good service."

Terming the 1946 reduction in the air mail rate from six to five cents "a mistake," Cisler said people will willingly pay double the ordinary rate for service given by air, and the payment to the carriers should be adequate for services provided . . . If a subsidy is needed, it should be covered by separate appropriation by the Congress and not charged to air mail."

**NAL Accepts Rates:** Increased temporary rates proposed for National Airlines by CAB (see AMERICAN AVIATION, Dec. 15, 1948, page 16) have been placed in effect. A lump sum payment of \$1,022,000 covers the period July 14, 1947, through June 30, 1948.



# Confusion and Chaos Thrive In Cut-Rate Travel Market

By FRED HUNTER

Lack of protection for the public in operation of the various ticket agencies that do the advertising and drum up traffic for the \$88 and \$99 transcontinental carriers was emphasized in evidence presented at the four-day hearings in Los Angeles last month as part of CAB's investigation of the Large Irregular Air Carriers. CAB has no jurisdiction over the ticket agencies.

Only two of the agencies subpoenaed, Airlines Reservations and Airline Tickets, presented evidence to show that their employees were bonded and that they retained funds, either in cash or in bank deposits, in sufficient amounts to refund the tickets sold but still unused.

Only one carrier, Air America, brought out that it attempted to keep an eye on ticket agency cash to protect its flights and cover the tickets sold in its behalf. Air America testified it collected advance payments from the agencies in sufficient amount to cover the costs of flights.

Otherwise, the testimony indicated the non-scheduled carriers generally supplied ticket agencies with ticket stocks without even the formality of written agreements. Even oral understandings were on the vague side.

Testimony of ticket agency representatives indicated that the amount of commission to be paid was about the extent of their working agreements with the carriers. Some said they had copies of the filed tariffs of some of the carriers, but some didn't have too much knowledge of what a filed tariff was. No restraint of any kind was placed on the advertising by the ticket agencies and misleading copy went unchallenged.

The result in one instance was 65 passengers stranded in New York. There was considerable testimony about bouncing checks and hearing room comment about ticket agencies now presumably "in Mexico."

**Juicy Commissions.** Commissions paid to the ticket agencies are high, running from 15 to 25%. For the most part, ticket agencies remit \$77 to the \$99 carriers, keeping \$22 for themselves. General impression gained from the testimony was that in numerous instances the ticket agencies made bigger profits from a flight than the carrier.

Ticket agency practices, on occasion, became high-handed, the testimony revealed. In one case, an executive of a ticket agency summarily ejected a carrier's crew from the cockpit. This ticket agency manager moved into the pilot's seat himself, brought along his own copilot, and the two flew the trip from Newark to Los Angeles. The carrier's owner didn't know about it until it was all over.

As an indication of the business informality of running a ticket agency, the owner of one said he decided to quit the business. So he just quit. But he said he thought the telephones were still in and that another man was running the business under the same name.

It also was disclosed that an agency in New York may use the same name—and similar advertising—as one in Los Angeles and still another in San Francisco, but the ownerships are different and none have any actual connection with each other.

The ticket agencies advertise aggressively. One ticket agent said he had spent \$10,000 in purely local advertising in Los Angeles in six months. They're also active in scouting up sub-agencies. One ticket agency said it had 25 sub-agents. These sub-agents are allowed 15% commission, leaving the general agency a 10% over-ride. These sub-agencies are in outlying areas. Some of them are authorized Air Traffic Conference travel agents selling the \$99 tickets on the side.

**Methods Misleading.** Robert M. Sample, assistant general manager of the Better Business Bureau, appeared at the hearing to put into the record that organization's protest of the methods of the ticket agencies. Their names and their advertising both are misleading, he declared.

"They use names which lead the public to believe they handle the reservations of all airlines," said Sample. "This is not true. The use of these misleading names is an unfair practice."

Sample also said the \$88 advertising is mainly bait for \$99 reservations. In recent weeks practically all of the ticket agencies have been advertising \$88 fares. Most of the agencies admitted they didn't handle \$88 carriers direct, but obtained them through another agency. The \$88 service was admitted to be spasmodic and uncertain, but the \$99 flights were going out most of the days in the week.

The hearing disclosed that when one passenger, after being given the "run-around" by several ticket agencies, insisted on an \$88 ticket, an agency told him it would give him a \$99 ticket and make up the difference out of its own pocket. Actually, the agency would have been out nothing. Remitting only \$77 to the carrier, it still had an \$11 profit on the sale.

**Agency Victims.** The hearing also brought out the rather pathetic situation existing among the group of what might be called "fringe" carriers. They have a DC-3 or two and hover on the border of the business. They apparently lack legal counsel—or their legal advice is bad—and they also have no effective ac-

counting methods. This makes them fair prey for sharp-shooting ticket agencies. They get hopelessly involved in their paper work and, whether unwittingly or just in desperation in trying to make a dollar, violate almost every CAB regulation in the book.

Carriers and ticket agencies alike insisted there was no regularity in the schedules of the non-certificated carriers. But records introduced at the hearing disclosed that the heavy traffic week-ends invariably saw flights going out. And ticket agencies testified they generally knew a week in advance of the scheduled departure of a flight.

Just what action the CAB may take as a result of its inquiry will depend upon what a sifting of the evidence obtained in hearings in New York, Los Angeles and Seattle produces. Curbstone opinions expressed by spectators at the Los Angeles hearing was that some of the \$99 carriers probably are more or less in the clear. But it also was agreed that Oliver W. Carter, chief of the CAB's enforcement section, had compiled a record which would give the Board a pretty clear picture of what is going on and that objective action should result.

## Tightening the Screws

Suspicious practices of some of the so-called Large Irregular Carriers operating under Economic Regulation 292.1, the general exemption for irregular passenger carriers, prodded the CAB into action on Dec. 13 when it decided the exemption was too loosely worded, and therefore subject to abuse, and circulated for comment a draft of a proposed new and tighter 292.1.

The regulation would tend generally to tighten restrictions on the large irregular carriers, and to a lesser extent on the small irregulars, such as fixed-base operators offering planes for charter. A major feature is a proposed system of individual exemptions to replace the blanket exemption now in force. A non-certificated passenger carrier could not operate under the new regulation until he had applied for and been granted an individual exemption based on the merits of his individual case.

However, Large Irregular Carriers operating under existing Letters of Registration would be allowed to continue until their applications for individual exemptions had been acted upon. The present 292.1 would go out of existence 30 days after the new regulation takes effect.

**Agency Abuse.** The proposed regulation was described by CAB as being "responsive to the need for some means to cope with increased activities of such carriers outside the proper scope of the exemption they are intended to enjoy under 292.1."

Clarified would be the fact that the exemption extends only to irregular operations and that air transportation



## CAB CALENDAR

which is not irregular is outside the exemption and in violation of the Civil Aeronautics Act. Sections of the Act from which the irregular carriers would be exempt will be fewer than under existing rules.

A major abuse which CAB hoped would be eliminated by the new regulation is a certain type of tie-in between ticket agencies and irregular carriers. For the first time, the Board would consider as a violation the "widespread practice of piecing together the individually 'irregular' operations of two or more carriers to make an overall pattern of regularity . . ."

A provision of the new 292.1 requires an affirmative showing that the nomination of a single ticket agency to act for two or more carriers would not adversely affect the public interest or the carrier's intention of ability to conform to the provisions of the Act. Lacking such a showing, no such tie-ins would be permitted. Also, large irregulars would be forbidden to establish or use joint rates with another air carrier.

Describing its proposals as "a new approach to economic regulation of so-called 'Large Irregular Carriers,'" the Board said the new rules would in effect set up a means for reviewing current exemptions of such carriers to determine "whether, in the light of all relevant considerations, such exemptions should be terminated or should be permitted to continue in the form of individual temporary exemptions."

It looked as though the long-impending crackdown on the sharp practices of some of the irregular carriers finally was to materialize. Comments on the new 292.1 are due by Jan. 15.

## Capital Fined \$500

After entering a plea of nolo contendere, Capital Airlines last month was fined \$500 in U. S. Court for the Northern District of Virginia for providing unauthorized free transportation.

Capital was fined \$100 on each of five counts, and three other counts were suspended. The company could have been fined a maximum of \$40,000. The U. S. attorney, at the request of the Civil Aeronautics Board, had filed an information charging that Capital provided free trips for a number of contest winners between May and October, 1945.

If there are any similar infractions by Capital during the next five years, the three counts will be activated, with the possibility that maximum fines would be levied. The court has, in effect, placed the company on probation for that period, it was explained.

## Ad Program KO'd

It had been a bad year, financially, for the nation's airlines, so it was to be expected that when the Air Transport Association's board of directors met

in Washington in mid-December economy would be the watchword.

Not only did the directors approve Finance Committee recommendations for cutting approximately \$300,000 out of ATA's million-dollar budget, but they also axed an Air Traffic Conference proposal for an advertising program entailing expenditures of \$500,000 to \$750,000.

Rumors that all officers of the ATA might not be re-elected were proved wrong as the following were elected to serve another year: Emory S. Land, president; Robert Ramspeck, executive vice president; Milton W. Arnold, vice president—operations and engineering; M. F. Redfern, vice president—traffic and secretary; J. F. Hintersehr, treasurer, and John W. Thompson, vice president—director of information.

New directors elected in a regular rotation change are: J. H. Carmichael, president of Capital Airlines; T. E. Braniff, president of Braniff Airways, and Robert M. Love, president of All American Airways. They replaced Croil Hunter, Terrell C. Drinkwater and Robert J. Smith.

## French Buying 10 C-54's

The French government is using an Economic Recovery Administration grant of \$1,500,000 for the purchase of 10 C-54-B aircraft from American Airlines for use in its overseas territories, ECA officials announced Dec. 20.

The grants include \$1,072,000 against the fourth quarter of 1948 and \$428,000 against the first quarter of 1949. The deal involves 12 spare engines. An additional \$10,000 grant for aircraft, parts, accessories and ground handling equipment was made available for use in French North Africa.

Purchases are being handled through the French Supply Mission, 1800 Massachusetts Ave., N. W., Washington, D. C.

Since American Airlines began replacing its DC-4's and DC-3's with DC-6's and Convair Liners, it has disposed of 15 of the DC-4 (C-54) model. Two of them have been sold to Royal Dutch Airlines (KLM) and two to Transocean Air Lines. A fifth is in use on the Berlin airlift.

## Outstripping the X-1

It is now "possible to build man-carrying airplanes with speeds two or three times that of the X-1," according to Lawrence D. Bell, president of Bell Aircraft Corp. and co-winner of the Collier Trophy Award. Speaking at the annual Wright Brothers' dinner, Bell praised the work of the engineers that designed the X-1, first airplane to travel faster than the speed of sound. He cited the fact that the X-1, which gave the first transient experience in subsonic, transonic and supersonic ranges of speed, did so "in its original configuration as it came off the drawing boards—not a single change has been made or is now deemed necessary."

Jan. 4—Hearing on route consolidation proposals of Transcontinental & Western Air, American Airlines and Eastern Air Lines. (Docket 2581 et al.). 10 a. m., e. s. t., Conference Room "A," Departmental Auditorium. Examiner Ferdinand D. Moran.

Jan. 10—Hearing in Transcontinental & Western Air vs. Pan American Airways Saudi Arabian Complaint Case. (Docket 3264). Tentative. Place and hour to be announced. Postponed from Dec. 6. Examiner Ralph L. Wisler.

Jan. 10—Oral argument in Continental Air Lines Route Consolidation Case. (Docket 576 et al. and Docket 3109). 10 a. m., e. s. t., Room 5042, Commerce Building.

Jan. 10—Hearing in interlocking relationship proceeding involving J. C. Herbert Bryant and Capital Airlines. (Docket 3305). Tentative. Place and hour to be announced. Examiner R. Vernon Radcliffe.

Jan. 10—Hearing in Transcontinental & Western Air vs. Seaboard & Western Airlines Complaint Case. (Docket 3346). Place and hour to be announced. Examiner J. Earl Cox.

Jan. 12—Oral argument in Pan American Airways San Juan-Miami Tariff Investigation. (Docket 3274). 10 a. m., e. s. t., Room 5042, Commerce Building.

Jan. 10—Hearing in Service in New England States Case. (Docket 2196 et al.). 10 a. m., e. s. t., Court Room No. 4, Twelfth Floor, Federal Building, Devonshire Street between Milk and Water Streets, Boston. Examiner Edward T. Stodola.

## Aviation Calendar

Jan. 5—Florida Flying Alligator Club 14th Annual reunion, Melbourne, Fla.

Jan. 7-9—All American Air Maneuvers, Miami, Fla.

Jan. 10-14—SAE Annual Meeting and Engineering Display, Hotel Book-Cadillac, Detroit.

Jan. 12-14—Conference of commercial aircraft spray operations, U. of Illinois, Urbana.

Jan. 13-14—Fourth NAS Council Meeting, AIA offices, Hollywood, Calif.

Jan. 18-Feb. 11—Air Transportation Institute, American University, Washington, D. C.

Jan. 24-27—IAS 17th Annual Meeting, Hotel Astor, New York City.

Jan. 27—SAE, Metropolitan Section, fuels and lubricants mtg., Engineering Societies Bldg., New York City.

Mar. 3—SAE, Metropolitan Section, air transport meeting, Engineering Societies Bldg., New York City.

Apr. 3-6—American Association of Airport Executives annual meeting, Oklahoma City.

Apr. 11-13—SAE National Aeronautic & Air Transport meeting, Hotel New Yorker, N. Y.

May 2-4—Airport Operators Council, annual meeting, Brown Palace Hotel, Denver, Colo.

July 3-4—Southern California International Air Races, Long Beach.

## International

Jan. 11—ICAO Communications Division, Montreal.

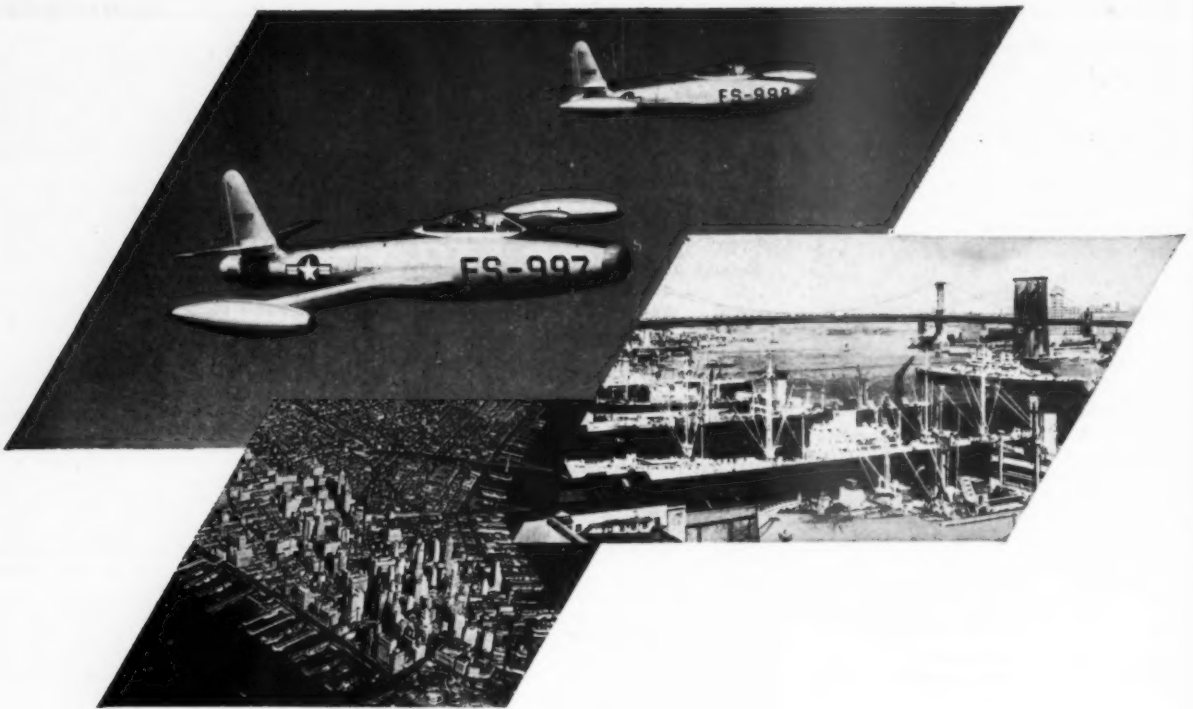
Feb. 8—ICAO Operations Division, Montreal.

Feb. 15—Inter-American Travel Congress, Buenos Aires.


Feb. 22—ICAO Airworthiness Division, Montreal.


July 13—ICAO North Pacific Regional Air Navigation Meeting, Seattle.

Aug. 24—ICAO African-Indian Ocean Air Navigation Meeting, Algiers.



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seaport on the face of the earth . . . New England's harbors of the fishing

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and inland . . . the many productive farms . . . and the  
industries which turn out everything from cotter

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## A Frank Report by MATS

For some time we have been eagerly awaiting the first report of the Military Air Transport Service to the Secretary of Defense so that we could find out how much money we have saved by merging the transport services of the Air Force and Navy. The report was released last week and it dealt us a cruel blow—we can never find out how much money we saved or if we saved any.

Calmly, and with a frankness remarkable in any government document, MATS' first quarterly report says: "It is not possible now, and from the results of three months' study it appears that it never will be possible to total the column of overall costs of operating ATC plus NATS and compare that figure with the cost of MATS."

This statement is explained away by the fact that the parent services of the two organizations, the Air Force and the Navy, used "irreconcilable" systems of cost accounting. We are informed that MATS assigned a group of accountants to the job of finding a cost basis for ATC and NATS to which MATS' costs could be matched, but the project was abandoned at a dead end.

In lieu of concrete financial figures, however, the report offers some statistics to prove that "clear and substantial" economies of operation have been effected by the merger of ATC and NATS, even though it can't be proved dollarwise.

For instance, MATS, at the end of September, was operating with 61,295 officers, enlisted men and civilians, or 2,256 less personnel than the combined ATC and NATS had when they were merged in May. Considering the fact that the Berlin air lift created a demand for additional personnel, these figures appear to be evidence of some economy of operation. In addition, consolidation of routes, terminals, buildings and equipment must have saved some money, although again no figures are quoted.

**Merger a Success.** Aside from economy, however, there seems to be no doubt but that the merger of the two air transport services has proved successful and that more efficient operation has resulted. MATS' participation in the Berlin air lift is in itself proof of this.

The quarterly report warns that MATS is wearing out its planes at an abnormal rate, due to the demands imposed on them by the Berlin air lift. One squadron is averaging 14 hrs. daily utilization of its aircraft, others are getting 11 hrs. and more. This compares with pre-air lift utilization of about five hours per day. This wear and tear is going to necessitate a complete re-equipping of the MATS fleet within the next five years, involving the purchase of 200 four-engine transports, about 100 two-engine transports



**Sonic Research Plane**—This top view shows the peculiar wing configuration of the third in the series of Air Force sonic research planes, the Northrop X-4. The X-4 will be used to explore flight characteristics in the high sub-sonic flight range. It is controlled by Northrop-developed "elevons," a combination of aileron and elevator. Unlike other Northrop flying wings, however, the X-4 has a vertical tail fin. Powered by two Westinghouse 19B jet engines, located on either side of the fuselage, the X-4 will probably do most of its flight test work in the neighborhood of 650 mph. It recently completed its first test flight at Muroc (Calif.) Air Force Base.

and a number of smaller utility transports.

The report also indicates that MATS does not have the equipment to handle a national emergency, a fact which is now fairly well known. MATS' emergency lift requirements are estimated at 7,500,000,000 ton-miles annually, and the report points out that, even if MATS were to take over all the available strategic transports from the civilian airlines, it would only be able to provide about 2,000,000,000 ton-miles.

## Behind Lockheed's F-94

There's an interesting story behind the development of the Air Force's latest jet fighter, the Lockheed F-94. You might say it was developed by accident.

The F-94 is actually an adaptation of Lockheed's two-seat jet trainer, the TF-80. When the TF-80 was originally developed, Lockheed added three feet of fuselage to the standard F-80 Shooting Star to accommodate the extra seat. In all other respects, except for a late model Allison J-33 power plant, the TF-80 was a normal Shooting Star. But when they took it aloft for flight testing, they discovered that the longer fuselage gave the plane better performance than the standard model of the F-80.

The TF-80 was put into production, destined to be a transition trainer. Recently, however, the Air Force decided it needed an all-weather fighter and it needed one soon. The best thing available in the field of all-weather fighters was Northrop's F-89, still in an early experimental stage and possibly two years from actual operational service. Then somebody suggested looking into the possibilities of the TF-80.

The Air Force gave it an "evaluation," which is military language for a "once-over," and they liked what they evaluated. The extra seat in the TF-80, originally intended for the instructor-pilot in the training version, would take care of the radar operator required in all-weather operations; the plane was large enough to carry the radar equipment, yet light enough to be maneuverable; its performance was better than satisfactory; and, most important, it could be delivered almost immediately, since the basic airframe is already in production and only minor changes are required for the installation of the radar equipment.

So the Air Force will buy a production quantity of F-94's if President Truman approves the purchase request now on his desk.

JAMES J. HAGGERTY, JR.





Lawrence D. Bell



John Stack



Capt. Charles Yeager

### Industry, Research, Piloting—

Three collaborators toward the goal of supersonic flight were awarded the Collier Trophy for 1948 in ceremony at the White House, Dec. 17. The triple winners of aviation's high award were: Lawrence D. Bell, president, Bell Aircraft Corp., "for the design and construction of the special research airplane X-1"; John Stack, of the National Advisory Committee for Aeronautics, "for pioneering research to determine the physical laws affecting supersonic flight and for his conception of transonic research airplanes"; Capt. Charles E. Yeager, U. S. Air Force, "who, with that airplane (X-1), on Oct. 14, 1947, first achieved human flight faster than sound."

### For Aviation Achievement

The anniversary of the Wright Brothers' Kitty Hawk flight has for some years been the occasion for honoring outstanding achievements in the field of aeronautics. This time list of honorees was unusually distinguished, the list of achievements unusually great.

To Dr. William Frederick Durand, 89-year-old dean of America's aeronautical engineers, went the newly-established Wright Brothers' Memorial Trophy "for significant public service of enduring value to aviation in the United States." He was selected for many important contributions to aviation made over a period of years.

The Collier Trophy, generally regarded as the nation's highest aviation honor, went to the three men held most responsible for the first successful human flight faster than sound. They were: John Stack, NACA research scientist at Langley Field, credited with conceiving the first transonic research planes; Lawrence D. Bell, president of Bell Aircraft Corp., whose company designed and built the X-1, first plane to crash the sonic barrier; and Capt. Charles E. Yeager, U. S. Air Force, who on Oct. 14, 1947, flew the X-1 above the speed of sound.

The annual Frank G. Brewer Award for timely achievement in the field of air youth education went to Philip S. Hopkins, of Link Aviation, Inc., Birmingham, N. Y.

### Inaugural Airline Committee

Linus Glotzbach, assistant to the president of Northwest Airlines, who is chairman of the National and International Airline Transportation and Information Committee for the inauguration of President Truman on Jan. 20, has announced the members of his committee as follows:

C. R. Smith, Juan T. Trippe, Thomas

E. Braniff, Sig Janas, W. A. Patterson, Croil Hunter, C. E. Woolman, George E. Gardner, J. H. Carmichael, Warren Lee Pierson, Sam Solomon, Robert Smith, F. N. Higgins, David L. Behncke, Wayne W. Parrish, T. C. Drinkwater, J. W. Miller, Robert F. Six, Carlton Putnam, E. V. Rickenbacker, Robert Ramspeck, A. J. Hayes and G. T. Baker.

Honorary committee members from foreign carriers are Gordon MacGregor (TCA), Tore Nilert (SAS), Henri Lesieur (Air France), Vernon Crudge (BOAC), and C. F. C. Meuser (KLM).

Offices of the committee have been established in the Old Post Office Bldg., Washington, (Sterling 1555 and Executive 3400), with Mrs. Florence Kerr as assistant chairman.

### Engineers Elect Officers

The Flight Engineers International Association, at its first convention at the Lexington Hotel in New York, elected Lawrence Hurrion of Pan American Airways president of the organization. J. Frick, Eastern Air Lines; Sydney Carter, TWA; and E. Burdick, AOA, were elected v.p.'s.

The association received its charter from the American Federation of Labor last month. National headquarters are at 205 E. 42nd St., N. Y. Albert Fribourg is attorney for the association.

**NPA Officers Named:** Officers of the recently-formed National Pilots Association, organized by non-union pilots of National Airlines, are: R. J. Hettenbaugh, president; E. Harris, v.p.; James Sammon, executive secretary; James Maxon, treasurer, and William Bullock, safety officer. All officers are NAL pilots.



### Triple Honors—

American Aviation Publications, consistent winner in TWA's annual writing competition, hit the jackpot this year when three staff members won awards in the 11th annual event. Receiving awards from Gordon Gilmore, TWA public relations director (right), are (l. to r.) William D. Perreault, operations and maintenance editor of AMERICAN AVIATION, second in the technical class; Eric Bramley, executive editor, AMERICAN AVIATION, second in magazine and book class, and Gerard B. Dobben, AMERICAN AVIATION DAILY, second in class for newspapers under 100,000 circulation.

Other winners were: Newspapers over 100,000 circulation—First, Robert Sibley, Boston Traveler; second, Max B. Cook, Scripps-Howard Newspapers; third, Mildred Diefenderfer, Wall Street Journal. Newspapers under 100,000—First, Mary L. Hoban, Johnstown, Pa., Daily Tribune; third, Eryne Conel, columnist in midwest papers. Magazine and book class—First, Robert S. Ball, of Detroit, for book on marketing of seafoods by air; third, C. B. Colby, for work in Air Trails Pictorial. Technical Class—First, Nathaniel Silsbee, Aero Digest; third, James Strebig, Associated Press.





Joseph J. Dysart  
PAA Maintenance Manager

## ADMINISTRATIVE

**Ben Wright** has been appointed to the dual position of director of public relations for American Airlines and American Overseas Airlines. A former Michigan newspaperman, Wright served in the Air Forces in World War II and joined AOA two years ago as director of public relations. He had also served as acting director of American's PR department since last September.

**R. C. MacInness** has been named director of public relations for Trans-Canada Air Lines. Associate manager of the press bureau of Canadian National Railways and TCA since 1946, he had been on loan since last October to Canada's Dept. of National Defense.

## OPERATIONS-MAINTENANCE

**Joseph J. Dysart**, former Latin American Division engineer for Pan American Airways and more recently engineer for the Atlantic Division in New York, has returned to Miami to fill the newly-created post of maintenance manager. He joined PAA as an apprentice engineer in 1935.

**Col. Luther Harris**, former airline executive, has returned to active duty with the Air Force and is now director of maintenance for the Combined Air Lift Task Force under General Tunner. His current address for commercial mail is Palast Hotel, Wiesbaden, Germany.

\*\*\*\*\*

**Charles O. Cary** has been appointed executive secretary of the Air Coordinating Committee, succeeding **John Sherman**, resigned. After serving with American Airlines and Alaska Airlines, Cary in 1944 became executive assistant to **W. Welch Pogue**, then chairman of the Civil Aeronautics Board, and since May, 1946, has been special assistant to **John Nicholas Brown**, Assistant Secretary of the Navy for Air.

# Airline Commentary

By ERIC BRAMLEY

**C**APITAL AIRLINES' coach service between New York and Chicago has been whizzing right along, carrying good loads . . . The question naturally comes to mind: what kind of people are riding on the service? . . . Are they rail coach passengers, or what? . . . We may be able to illustrate slightly by telling a story . . . Some time after a trip left New York, one of the passengers asked the hostess if he could please have his suitcase . . . She said she was sorry, and explained that it would be impossible to get at it in flight . . . However, if it was important, they would see if they could locate it during the stop at Pittsburgh . . . Yes, said the gentleman, it was rather important, and he would appreciate any assistance they could render . . . So, during the Pittsburgh stop the baggage was shuffled until the suitcase was discovered . . . Gratified, the man opened it, removed a small package, and gave it back to them . . . The package contained two sandwiches . . . (Incidentally, the suggestion has been made that a third line be added to the cabin sign, which now says "Fasten Seat Belts" and "No Smoking Please" . . . Third line would say "Time to Put on Shoes" . . .)

**Harold Harris**, vice president and general manager of American Overseas Airlines, told some fascinating stories the other night in a bull session with us about the early airline days in South America . . . He told about Peruvian Airways Corp., which eventually grew into the system now operated by Pan American-Grace Airways—a system with which he was so closely connected for so many years . . . He was in on the beginning, saw the operation start with a single-engined Fairchild, which took off from a road, and which flew one round-trip a week (sometimes) . . . It would be impossible to relate the stories here, but here's what comes to mind: Harold says it is his understanding that that single-engined Fairchild, the first plane used by what is now Panagra, is still in existence in Peru . . . For our money, it belongs among the planes being collected for the National Air Museum . . . It would be nice if Panagra, or somebody, looked it up . . .

American Aviation Publications crashed through in a big way in the 11th annual TWA writers competition, winning three places . . . Jerry Dobben brought home a second prize for his work in *American Aviation Daily* (the judges' comment was that "this is factual, informative commercial aviation writing at its best") . . . Bill Perreault won a second for his fine handling of technical material for our magazine . . . And we came home second for some magazine writing . . . The judges also said that this column was "informative and chatty" (now you know) . . . We don't believe there have ever been so many guys from one outfit cop prizes in the competition . . . All of us were flown to Phoenix for the award dinner and a Quickie Vacation in the sun . . . The trip was expertly handled by the TWA public relations gang, Phoenix Chamber of Commerce, and everyone else who participated . . . We won't mention the side trip to the gaming halls of Las Vegas, where we made a sizeable contribution to the welfare of the community . . . We're the sucker those boys have been looking for . . .

Because people seem to come and go so rapidly in this aviation business, we sometimes get to thinking that our almost 12 years in it makes us sort of a veteran . . . But, thank goodness, something always happens to knock our ears down a bit . . . Recently we spent some time glancing through *Chirp*, the publication of the Early Birds . . . You've undoubtedly seen the Early Birds in their checkered caps at various aviation affairs, like the air races, etc. . . . Listen to the qualifications for EB membership: "Membership shall be limited to those who piloted a glider or airplane, gas balloon or airship prior to Dec. 17, 1916 . . . except that nationals of countries other than the United States engaged in World War I must have met the foregoing conditions prior to Aug. 4, 1914" . . . So stand aside, you youngsters who have been around only 20 years . . . Here are the fellows who really pioneered the flying machine . . . And a tremendous amount of credit and a pat on the back go to Frank A. Tichenor, publisher and editor of *Aero Digest*, who announced not so long ago his endowment of EB reunions for the next 20 years, the balance, if any, to go to the widow of the last Early Bird . . . That is quite a gift . . .

# Prospects Dim for CAA's Central Training Base Idea

By WILLIAM D. PERREAULT

CAA Administrator Del Rentzel has acknowledged that he is investigating the possibility of taking over American Airlines' training base at Ardmore, Okla., for the establishment of a government operated training center for airline and military flight crews. Plans are very indefinite at this date. CAA appointed a two-man committee to study the possibilities of a central school but the report of this committee in regard to the situation at Ardmore, from which American is expected to withdraw in February, has not been given adequate study on which to base conclusive action.

The entire scheme does seem contrary to CAA's clamor for turning the responsibility for airline operations over to the airlines.

It has also been acknowledged that this training center, if acted on, would provide a training place for radio operators, navigators and flight engineers as well as pilots. Likelihood for success of any program which is of such an all inclusive nature, and which will require in the vicinity of \$15,000,000 to implement, is very doubtful.

When the scheduled airlines of the United States find it necessary to reduce the budget of their own Air Transport Association by about \$300,000 (29%), airline financial support for this type of program seems doubtful. The Federal government seems to be in a similar position in so far as budget increases are concerned.

**Obstacles to Centralization.** There has long been a need for a central training school for the airlines but time and again as the suggestion appeared, close scrutiny proved that operational obstacles to action were too great. When American Airlines set up the Ardmore base the number of crews requiring training in every phase of airline operation was very great. The training has gradually dwindled until American now sees fit to close out the base.

American was and is one of the outstanding examples of the willingness and ability of an airline to take crews off of regular duty, assign them away from their home base for training and pay the related "per diem." In addition to running up training costs in rapid multiples, this procedure is not possible in the average airline operation. Most of the airlines sandwich training between flight schedules to permit them to meet their schedule obligations. This minimizes the cost to the airline of the employee time and completely eliminates the "per diem" costs.

To justify centralized schooling for flight crew members and hope for economical operation, we must assume that it will be able to handle the pilots

from a number of airlines in a single group. From this type arrangement it will become possible to gain the benefits of group action. A certain number of airplanes would have to be available to meet the maximum need of the proposed school and a maintenance function of like proportions would be required. CAA tentatively expects to operate 18 airplanes, including DC-3's, DC-4's, the DC-6, Constellation, Stratocruiser, Martin 2-0-2 and Convair-Liner.

From the very nature of the arrangement these airplanes would have no earning capacity. There are very few airline aircraft which are allocated to training only. Most training is done with service airplanes between schedules, and even when assigned to flight training schedules the ships are often borrowed to meet schedule demands. The proposed type of operation (using airplanes with no revenue producing capacity) is expensive.

**Complex Pattern.** Airline flight crew training is a complex pattern of characteristics peculiar to each airline's operation. By the time the airlines start to train crews they are dealing in specific items. The crews have been trained in basic equipment operation, navigation, communications, etc. They are as-

sembled in the airline schools to learn the peculiarities of that operator's equipment and procedures as compared to the general practices.

There are more DC-4 airplanes in service with the domestic scheduled airlines than any other four-engined type. Specifically, there are 266 in use in this category. Let's examine some of the difficulties of centralized training in the light of the DC-4 series airplanes. There were approximately eight major versions of this airplane before the airlines turned them over to the modification centers. It is impossible to estimate how many varieties now exist but all of the basic types except the C-54-C airplane are in domestic service.

Fuel systems represent one of the major points of training in equipment among the airlines. Fuel system arrangement and operating procedures are very critical. Fuel capacity and airplane range—a fundamental relationship—is always stressed. There are DC-4 fuel systems with anywhere from 1800 to 3600 gallons fuel capacity. Picture the difficulty which would exist in trying to get across these many systems to a mixed class of pilots from six airlines with six system arrangements. The condition exists—but can it be handled in this type school and still preserve group benefits?

**Uniformity Lacking.** Fuel capacity alone would not be difficult, but in these same airplanes the tank located in a given position will be Number 1 main

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Be it known that JOHN DOE									
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and was instructed in the following phases of investigation									
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Powerplant & Equipment					Press Relations, Photography				
Flight Planning					Procedures of Investigation				
Search & Rescue					Structural Examination				
Weather, Communications					Statistics				
Medical, Physiological					Evaluation of Evidence				
Fire Protection					Application of Lessons Learned				
MAY YOU NEVER BE THE OBJECT OF HIS ATTENTION									
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Twenty-two state aviation officials and state police chiefs									
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course was conducted at Mitchell Air Force Base, Nov. 8-12. The certificate is									
superimposed on a crash injury research file card.									

tank in one airplane and an auxiliary fuel tank in another. Some of the airplanes have eight fuel selector and cross feed fuel valve controls in the cockpit while others have 10, some have four or five fuel booster pump switches with two positions each while others have six or eight with three positions each.

A limited number of the airplanes have fuel dumping provisions and even these are different in the various versions. Even airplanes with the same basic fuel system do not have the same fuel capacity due to the difference in sealant quantities.

The post war DC-4, not included in the above paragraphs, is again quite different from the war time models.

Fire extinguishing procedures are another important aspect of pilot training. DC-4 airplanes are equipped with anywhere from two to seven bottles of CO<sub>2</sub> for fire fighting. In some airplanes the signals that warn of a fire work on a temperature rise principle alone while in other airplanes they work solely on high temperatures. These factors influence the reaction of the pilot when he sees the fire signal. Having established that a fire exists, the pilots of the various airplanes are faced with varying requirements.

In the early planes the pilot operates two controls, one which closes the fire wall shut off valves and opens the distribution manifold, and another that discharges the carbon dioxide. Modified airplanes feature three controls to accomplish this portion of the procedure. Controls for the engines are located in a standard arrangement but those for the various compartments, the heaters, etc., might be grouped with one another, require only one control instead of two or three, or be located at the floor level instead of over the instrument panel.

The DC-4 airplanes in operation by the airlines have Pratt and Whitney R-2000-7, R-2000-9, R-2000-11 and the post war model sometimes called the -13. Power output of this group varies from 1350 to 1450 horsepower and the manifold pressure and rpm combinations for each major flight configurations vary accordingly. This in turn affects acceptable fuel flow, fuel pressures, temperatures, etc. Likewise, one airline is operating Wright 9Hd engines in the DC-4 airplane with similar exceptions to any common approach to centralized instruction.

**Crew Duties.** Crew responsibilities are another important factor. This is especially true in the case of flight engineers, but in a modified degree with all crew members. United Air Lines is using pilot personnel for flight engineers. TWA has used a majority of mechanical personnel as have several other airlines. American has used a cross section of mechanics and engineers but provides a requirement that the pilots get mechanic's licenses within a certain time.

This emphasizes the difference in what these crew members will be expected

to do. Certain routine duties such as checking fuel tanks, a pre-flight inspection of the airplane, etc., can be expected of all of them. Can minor in-flight repairs to such accessible units as heating and electrical system unit be expected of the mechanically unlicensed and untrained pilot; or will gear and flap operation be assigned to the mechanically trained engineer with no pilot experience? These factors determine the basis for consolidating school activities.

It would be improper to state that the bulk of airline training is complete since training will never be complete; but at the same time it is in order to believe that the type of training for which the airlines can justify taking crews off flight schedules is very limited at this date. For instance the type of training which provides for the new navigation and communications equipment is unlikely to fall in this category.

Establishment of an effective school to handle the training of all airline crews will be dependent upon acceptance of a single standard of responsibilities and procedures among the various operators. The airlines to date have shown very little interest in this sort of standardization. When and if they can be made to feel the advisability of such a program, and the money to establish it is provided, the equipment limitations in every airplane and in every system paralleling those mentioned above will prove a difficult problem.

**Pilot Problem.** Pilot personnel are unlikely to agree to centralized training. It would bring about strong inroads to establishing other standards not in accordance with present policies. Individual characteristics of flight with various operators are a major basis for wage differences among the airline pilots. For instance, each of the airlines has different landing minimums and to a large extent these are based on the training level in each pilot group. CAA has authorized minimums below those now in use, providing adequate training preceded actual use in scheduled operations. When all the airlines train in the same facility these differences would assume major proportions.

It is CAB's task to assure the financial stability of the airlines and existing low weather minimums have been an obstacle to schedule reliability and profitable operation. It is reasonable to believe that once the training is monitored by CAA, rules requiring use of absolute minimums might be evolved and the training level necessarily raised to meet the need. Both the airlines and pilots are apt to find many disadvantages in this type handling.

CAA officials have indicated that the plan will be pushed only if it appears that the program could be operated at savings to both the government and industry groups involved. CAA's budget for fiscal 1950 does not include any provision for the project.

## Jet Engine Performance

Higher cycle temperatures and compression ratios are the prime requisites of improved jet engine performance, according to Abe Silverstein, chief of NACA's Wind Tunnel and Flight Division. Speaking before the Institute of the Aeronautical Sciences at the Wright Brothers' Lecture, Silverstein chose "Research on Aircraft Propulsion Systems" as a basis for his presentation.

In a pre-lecture discussion, and during the course of the lecture, the speaker indicated that we should look for speeds in the spectrum above 500 mph. Since we have aircraft in operation capable of speeds well into this range ("and these are likely to last for a number of years"), Silverstein commented that we should look for more advanced speeds in designing the airplanes of tomorrow.

The NACA chief emphasized that each type of engine from the compound reciprocating models through the turbo-jet, ram-jet, and rocket has a specific range in which it is most efficient.

Three indices provide the major comparison points in engine performance, he indicated. These are the thrust per engine unit of weight, thrust per engine unit frontal area, and thrust per unit of fuel burned. None of the engines will prove ideal by measurement with all these indices at all speeds and altitudes.

"If two engines will provide the same range, the lighter will be most desirable at all except maximum range conditions", said Silverstein. Using charts, he showed that under the normal working conditions a compound reciprocating engine and a turbo-jet engine will have the same range at speeds of approximately 500 mph. In such an instance Silverstein felt that the jet engine would be preferable, since it would provide for greater payloads at ranges less than maximum.

In regard to this particular point, speakers that followed Silverstein pointed out that some of this data were based on hoped for improvements and that developments in the compound engines might change these figures eventually. Likewise one of the other speakers indicated that although the high speeds discussed were ideal and necessary for military use, rational thinking toward peacetime aircraft might call for lower speeds and consequently alter the powerplant requirements.

**Temperatures Critical.** Development of materials which will withstand higher temperatures for use in jet engines was indicated to be one of the major difficulties. If cycle temperatures could be raised from the present range of approximately 1500 degrees F. to 4000 degrees it would increase the range of the jet powered aircraft by 40%. In a similar manner, increases in the



## OPERATIONS-MAINTENANCE

compression ratio of the turbine engine from 4 to 20 could produce a  $2\frac{1}{2}$  times greater thrust output, Silverstein indicated.

Supersonic compressors and turbines will help in raising compression ratios, with a decrease in compressor size and weight, and the development of ceramals (mixtures of ceramics and metals) for use in engine construction will permit many of the anticipated increases in jet performance. X-40 and S816 metals, multiple element alloys, are now used in turbines but anticipated goals of 4-5000 degrees F. cycle temperatures will probably require the use of ceramic oxides, nitrides, borides, and ceramic carbides, Silverstein indicated.

**Blow Out Minimized.** Increasing the compressor ratios will also minimize the blow out tendencies of jet engines. With present day engines, blow out is apt to occur at altitudes above 50,000 feet. At such times the flame in the combustion chamber goes out and the engine operation ceases. By increasing compression ratios from 4 to 20, altitudes of 80,000 feet might be reached before encountering blow out. At such altitudes improved airplane performance could also be expected.

Silverstein referred to the present day discussions about the benefits of radial over axial compressors, and vice versa, in jet engines and concluded that a combination of both will prove the

only real answer. He foresees the use of a series tandem compressor with an axial flow compressor followed by a radial flow compressor. The driving turbines will probably be arranged in a similar manner as shown by pictorial presentation during the course of the lecture. This arrangement appears to be ideal since axial flow compressors will give high volume while radial flow units will insure high pressures.

Liquid cooling of turbine blades was another interesting point of discussion during the lecture. Silverstein indicated that the Germans had been forced into blade cooling as early as 1935 because of the lack of quality metals for use in jet engine construction. Experimentation has shown that effective cooling can be obtained by circulating water through passages in the turbine blades and then carrying the heated liquid to a cooling radiator prior to recirculation. He commented that water appears to be usable in this type application despite the high temperatures, since the rotational speeds of the turbines produced centrifugal pressures which would prevent the water from vaporizing.

### Guggenheim Jet Centers

A national center of rocket and jet propulsion to be known as the Daniel and Florence Guggenheim Jet Propulsion Center is to be established at the California Institute of Technology. A second such center also will be estab-

lished at Princeton University. The Daniel and Florence Guggenheim Foundation has appropriated \$500,000 to support the two centers for a seven-year period and the Caltech institution thus will operate on a budget of approximately \$30,000 a year.

Simultaneously with the announcement, Dr. Lee A. DuBridge, Caltech president, named Dr. Hsue-Shen Tsien, formerly a member of the Caltech aeronautics faculty and now a professor of aerodynamics at Massachusetts Institute of Technology, to head up the Pasadena center.

"The basic research to be carried on at these centers will accelerate the application of the principles of jet propulsion to peace-time commercial and scientific purposes," said Dr. DuBridge. "A particularly important phase of their work will be the training of young scientists in this field."

The \$500,000 fund will be used to pay salaries of professors, stipends of graduate students, and research expenses. It does not provide for buildings or major equipment since these already are available. The principal post in each center will be a professorship named in honor of Dr. Robert H. Goddard, rocket pioneer. There also will be a number of post-graduate fellowships, at least three of which will be granted each year and will be known as the Daniel and Florence Guggenheim Jet Propulsion Fellowships.



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## TRAFFIC CONTROL

## Plane Spacing Increased

Five months after the mid-air collision of an RAF plane and an SAS transport near Northolt Airport, London, the British Ministry of Civil Aviation has decided that planes flying in control zones at Northolt will be separated by 1,000 ft. vertically, instead of 500 ft. The 1,000-ft. separation has been in use at London Airport for some time.

## Traffic Controllers for Berlin

An additional 40 reserve officers who served with the U. S. Air Force during World War II are being reactivated to serve as air traffic controllers with the Berlin Air Lift. Half of this group have departed for Germany while the other half are undergoing a 60 day refresher course at CAA control centers in St. Louis, Pittsburgh, Minneapolis, Memphis, San Antonio, Jacksonville, and Great Falls, Montana.

This 40-man group will be the third to be called upon in this work. Originally 19 CAA traffic controllers volunteered for a period of four months. This period ended Dec. 15 and an additional 15 men were sent to Europe to replace all but four of the original group who volunteered for additional service. The new group of 40 con-



**Utility Tractor**—The Beaver Tractor Co., Inc., Stratford, Conn., is marketing this four-wheel utility tractor for general airport work. The tractor is 5' 7" long, weighs 429 lbs. empty, operates about 7 hours on gallon of gasoline. Attachments adapt the tractor for plowing snow, hauling trailers and aircraft, towing lawn mowers and similar tasks.

trollers will supplement this latter group in keeping schedules at both ends of the airlift as precise as possible.

The urgent need for active traffic control is emphasized by the type of

operation experienced on Air Force Day when 373 instrument approaches were made at Frankfurt and 25 at Templehof. Total time delay was less than 10 minutes for service aircraft. These operations involved a thousand aircraft which carried 5500 tons into Berlin.

## MAINTENANCE

## MCA Standardization

Mid-Continent Airlines has standardized all 18 of its DC-3's to a point where any engine can be used on any of the fleet and in general has brought the airplanes to a degree of standardization where they are as near similar as any group of airplanes in operation. This has been reflected in lowering the mechanical delays to a point where there were 41,341 miles flown between delays during October. Further, the company was able to complete 725,605 of the 727,818 miles scheduled for the month.

The maintenance program which achieved the standardization required a year to complete. It involved fabrication of standard instrument panels, redesigning of tubing connections at the firewall, incorporation of sealing couplings and flexible lines and rerouting of the engine plumbing.

## Mandatory DC-6 Check

CAA has issued a mandatory note requiring inspection of the supercharger

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## Delta's DC-6 Service

### EXTENDED ACROSS THE SOUTH



Starting January 4, Delta Air Lines will extend its Douglas DC-6 service across the South, with new flights between Atlanta, New Orleans and Dallas.

All flights will operate between Atlanta and Dallas by way of New Orleans, with a sharp reduction in flight time resulting on each segment of this new route.

Typical flight times across the South are as follows:

#### ATLANTA-NEW ORLEANS

1 Hr. 55 Mins. Non-stop

#### NEW ORLEANS-DALLAS

1 Hr. 46 Mins. Non-stop

#### DALLAS-ATLANTA

3 Hrs. 39 Mins. One-stop

#### DALLAS-MIAMI

7 Hours 9 Minutes

The new flights, which create the first DC-6 service all the way between Miami and Los Angeles, are synchronized to connect with American Airlines schedules in Dallas for a reduction in flight time on transcontinental trips.

Between Chicago and Miami, the pattern of service which began Dec. 1 remains unchanged. There are three flights daily over this route; with a non-stop each way. The DC-6's also fly non-stop between Chicago and Atlanta, with the other two flights being express runs which also serve Cincinnati and Jacksonville.

On all routes, the Delta DC-6's offer over 300-mile-per-hour speed, plus luxurious comfort. There are none faster, none finer, to and through the South.

General Offices: Atlanta, Ga.



## OPERATIONS-MAINTENANCE

mechanism and associated parts of the DC-6 airplanes as soon as possible on all airplanes having over 150 hours of operation since overhaul. The inspection would call for additional checks at each 350 hours of operation unless equipped with special lubrication fittings which are serviced each 260 hours.

All superchargers will have to be removed and overhauled at each 700 hours of operation and the related inspections completed.

**CAA Contract to Reading:** CAA has granted Reading Aviation Service, Reading, Pa., a contract for the inspection, repair and modification of multi-engine aircraft. The contract, which extends through June, 1949, involves work on the Douglas and Beechcraft airplanes used by CAA. The amount of work involved is uncertain in as much as the number of flight hours and the work per unit of time can not be accurately estimated.

## SAFETY

### Convair Deicer Approved

Consolidated Vultee has received CAA approval of a new type thermal deicing system for the Convair-Liner which operates on heat taken from exhaust gases rather than from combustion heaters as currently used in all other commercial aircraft.

Air used for thermal deicing in this system is drawn around the power section of the engine where its temperature is raised, and it is then ducted in proximity with the exhaust gas augments tubes. The air leaves this area at high temperatures which enable it to keep the leading edges of the wings and tail surfaces at temperatures out of the icing range even after routing through the associated ducting.

The basic system uses the same principles as applied in some of the wartime aircraft heating systems such as in the military C-47 airplanes. Since the heat is obtained without actual mixing with the exhaust gases there is little danger of exhaust gas products causing corrosion or other adverse effects.

Tests conducted during icing conditions proved that the system will function efficiently even with one engine inoperative.

### Danger: Mercury

The possible corrosive effect of metallic mercury on aluminum has been brought to airline attention by a recent incident in which United Air Lines experienced breakage of a container of this substance. The Aluminum Company of America explained that this corrosion resulted from mercury joining with the aluminum in the presence of moisture and causing rapid oxidation, forming aluminum oxide whiskers over the surface.

This is not possible unless the oxide surface of the aluminum has been cleaned away by natural cleaning or abrasion which exposes the aluminum to the mercury. In the same light, oil, grease or dirt on the aluminum surface would prevent or retard this action.

ATA has recommended to its members that in the event of mercury attack on aluminum it can be stopped by use of a paste made up of silver nitrate solution and gum arabic. This tends to soak all the mercury out of the aluminum with little or no impairment of the metal's strength. Subsequently the metal should be given a hot wash in a 10% solution of sodium or potassium dichromate.

To insure against possible incidents involving the carriage of mercury, an iron quick-silver flask or an outside container, designed to prevent leakage in the event that the inner container breaks, should be used.

### Blame for DC-6 Accidents

In a joint report covering DC-6 accidents of United Air Lines at Bryce Canyon, Utah, on Oct. 24, 1947, and American Airlines at Gallup, N. M., on Nov. 11, 1947, the Civil Aeronautics Board has placed the responsibility for contributing factors on the Civil Aeronautics Administration, Douglas Aircraft Co., and the airline operators.

Both accidents involved fire which resulted from fuel draining from the fuel tank vents and into the combustion air ducts of the cabin heaters where the fires broke out. In the Bryce Canyon accident, a considerable portion of the fire intensity are attributed by CAB to the ignition of emergency landing flares containing barium nitrate.

CAB cited numerous portions of Civil Air Regulations dealing with limitations associated with fuel system design, including the provision that in the case of inter-connected fuel tanks, "it shall not be possible for fuel to flow between tanks in quantities sufficient to cause overflow"; "the vent shall be of sufficient size to permit the rapid relief of excessive differences of pressure between the interior and the exterior of the tank"; and "vents and drainage shall not terminate at points where the discharge of fuel from the vent outlet will constitute a fire hazard."

In each instance, CAB elaborated on the fact that the airplane, although certificated under Part 04b which contains these requirements, did not comply with them. The report also emphasized the part played by hydraulic fluid found in the airplane's soundproofing, even though the dangers of this condition had been pointed out at an earlier date in CAB reports.

The CAB report concluded that "the failure of the manufacturer and the CAA to exercise full caution in the analysis of the fuel system of the DC-6 relative to proper location of fuel tank

vents to provide non-hazardous location for fuel drainage, as required by existing regulations, and the insufficient attentiveness on the part of the manufacturer, the CAA, and the air carriers to the procedures of fuel management employed by pilots operating DC-6 aircraft, were contributing factors."

## NAVIGATION

### Collins Radio Delivers

Collins Radio Co., Cedar Rapids, Ia., has already delivered some 400 VHF, ODR navigation receivers to the airlines and the government in connection with the rapid change from the low frequency bands. Current production rate of this one manufacturer on this item is 120 units per month. Collins expects to be able to complete delivery on an additional 800 units now on order within the next 90 days.

### Daily Plane Utilization Domestic

	Sept.	Oct.
<b>American</b>		
2 eng. pass. ....	5:44	6:06
4 eng. pass. ....	8:07	8:13
cargo .....	6:04	6:02
<b>Braniff</b>		
2 eng. pass. ....	6:32	6:33
4 eng. pass. ....	5:34	5:39
<b>Capital</b>		
2 eng. pass. ....	8:26	8:10
4 eng. pass. ....	6:30	6:59
cargo .....	3:50	3:07
<b>Caribbean</b>		
2 eng. pass. ....	2:54	2:49
<b>C &amp; S</b>		
2 eng. pass. ....	9:08	9:05
4 eng. pass. ....	7:35	7:38
<b>Colonial</b>		
2 eng. pass. ....	7:29	7:20
<b>Continental</b>		
2 eng. pass. ....	8:58	8:38
<b>Delta</b>		
2 eng. pass. ....	8:19	8:11
4 eng. pass. ....	7:41	7:40
cargo .....	6:54	8:51
<b>Eastern</b>		
2 eng. pass. ....	11:12	11:23
4 eng. pass. ....	6:38	6:43
cargo .....	5:59	6:04
<b>Hawaiian</b>		
2 eng. pass. ....	5:25	4:22
cargo .....	2:59	2:10
<b>Inland</b>		
2 eng. pass. ....	9:37	8:12
<b>Mid-Continent</b>		
2 eng. pass. ....	7:54	7:54
<b>National</b>		
2 eng. pass. ....	1:56	2:32
4 eng. pass. ....	6:22	6:29
cargo .....	3:54	....
<b>Northeast</b>		
2 eng. pass. ....	7:56	7:05
4 eng. pass. ....	5:22	3:13
<b>Northwest</b>		
2 eng. pass. ....	10:15	3:55
4 eng. pass. ....	9:44	9:13
cargo .....	4:10	4:05
<b>TWA</b>		
2 eng. pass. ....	10:15	10:03
4 eng. pass. ....	8:45	8:16
cargo .....	6:24	7:10
<b>United</b>		
2 eng. pass. ....	7:21	7:00
4 eng. pass. ....	6:50	6:38
cargo .....	2:52	2:42
<b>Western</b>		
2 eng. pass. ....	5:34	4:31
4 eng. pass. ....	6:13	5:45

## SAFETY SLANTS

BEECH Aircraft Corp. has initiated a series of bulletins to promote air safety among operators of its equipment and in aviation as a whole. Titled "Safety Suggestions," these illustrated folders will further the campaigns that Beech has been carrying on in the interest of the personal welfare and safety of pilots and passengers. The first bulletin covers certain aspects of icing conditions on the wings of aircraft which are apt to cause loss of lift, "the duck that didn't duck"—facts on bird-aircraft flight collisions, and comments on flight procedures.

This type of approach to aircraft safety is particularly valuable because the owner of Beech equipment will feel that each item is directed at his type airplane and even the general advice is more apt to be heeded. All the items in the first bulletin are generalized and apply to all aircraft. Copies are being sent to all those on the Beechcraft owners list and extra copies are available upon request.

A new parachute timing device has been designed by the Swiss. In operation it provides automatic parachute opening which is timed with relation to the altitude at which the jump is to be made. A dial on the face of the timing device makes it possible for the jumper to set the altitude at which the ripcord will be pulled and the parachute opened. The clock mechanism is set in motion by a cord attached to the airplane and activated upon jumping. After the desired time interval has elapsed, the clock mechanism triggers a knife which releases the rip cord and opens the chute.

Recommendations to doctors traveling by airplane are in order to prevent the carriage of canned ether which at high altitude is apt to leak and affect the crew and passengers. Recently National Airlines had an instance in which the crew of a DC-6 discovered strong fumes in the cockpit and later found that a doctor on board was carrying a partially filled can of the anesthetic in his bag which was in the baggage compartment. Pressure altitude at the time of the incident was 8,000 feet. CAA advises that a concentration of 3 to 3.5% will produce light anesthesia after prolonged inhalation.

**Still Serving:** Three Boeing 307 Stratocliners retired from active service by Pan American Airways 18 months ago have been sold to Airline Training, Inc., of Homestead, Fla., and will be put back into service as "flying classrooms" providing four-engined flight training for pilots, copilots and flight engineers.

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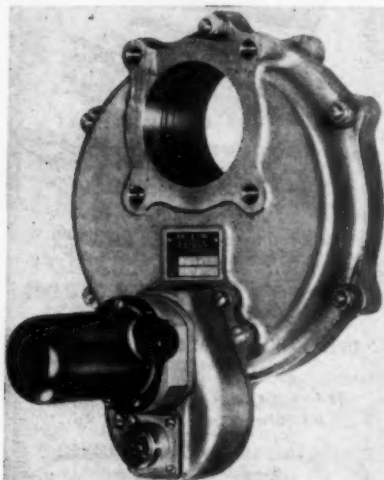
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NEW EQUIPMENT

# Fuel Shut-Off Valve

Saval, Inc., 1915 East 51st St., Los Angeles, Calif., has developed a high capacity motor operated fuel shut-off



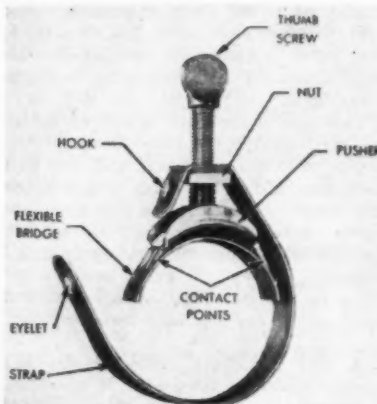
valve. Suitable for use in single point refueling systems and for rapid refueling in flight, the new Saval unit is known as the Shear-Seal shut off valve. The unit shown is for 2½" tube sizes with working pressure of 60 psi.

Weight is 5 pounds, 3 ounces. Housed in a cast aluminum housing and featuring stainless steel internal components, the new valve was designed to minimize turbulent fuel flow.

The unit operates at voltages between 22 and 28 volts DC with an amperage draw of 1.8 amps at 24 volts. The design enables use of an associated warning light. Units are available for 1¼, 1½, 2 and 3½-inch tubes adaptable for hydraulic fluid, water, oil, hot air and aromatic fuel.

# Tru-Grip Hose Clamp

Ideal Clamp Mfg. Co., Inc., 435 Liberty Ave., Brooklyn 7, New York, has



re-introduced its Tru-Grip hose clamp. The Tru-Grip meets latest AN specifications and was designed to provide greater assembly speeds and cut servicing time. The open end design permits application with the hose in position and a flexible bridge insures high clamping pressures at low torques, uniform radial compression and temperature compensation. The Tru-Grip was developed during World War II.

# Midget Meter

International Instruments, Inc., 331 East St., New Haven 11, Conn., has developed a midget meter for use in aircraft applications where size and weight limitations are important. The instrument, which is one inch in diameter, provides a scale chord longer than that provided on a normal 3½-inch meter.



Company claims that this highly sensitive instrument is accurate within plus or minus 2%. This ruggedly constructed meter, protected against vibration and shock, is of the moving coil, D'Arsonval type. The instrument is available in water tight designs and uses a threaded ring to provide panel mounting instead of the mounting screw arrangement.

# Continuous Hinge

Moynahan Bronze Co. 9058 Alpine, Detroit, Mich., has developed a new type of continuous hinge or connector which combines structural factors with normal functions. The hinges are constructed by fabrications of extruded hinges and connectors of 24ST and 75ST aluminum alloys. These are available in lengths up to 12 feet and in any shape. The hinge combines the structural airframe member and hinge instead of making two or more parts necessary.

Northrop Courses: Northrop Aeronautical Institute, Hawthorne, Calif. has published a new 32-page catalog describing the school's facilities and courses. The catalog describes the Institute's classroom laboratory and shop facilities where Northrop conducts CAA approved A&E mechanics courses and a two-year aeronautical engineering program.

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## In Court at Last

Faced with a situation wherein the only alternative to complete capitulation was a showdown in a court of justice, the Airport Leaseholders Committee finally took the step that for some time had appeared to be all but inevitable and filed suit against the Port of New York Authority in the N. Y. State Supreme Court in Queens.

On behalf of eight scheduled airlines serving the New York area, the suit asked the court to direct the Port Authority to carry out its obligations with them for operations and developments at New York International (Idlewild) Airport under leases assumed by the Authority from the City of New York in 1947.

The basic issue presented to the court was that of whether the Port Authority "as a business organization is legally and morally bound to honor contracts recognized as valid and binding." The attitude of the Authority had been that it is immune to suit by private corporations, and it is on this point that the airlines want the court to rule.

Named as defendants were: the Port Authority as a body and individually, the executive officers of the Authority, and the port commissioners, collectively and individually.

**Aims of Suit.** The court was asked to find that: (1) the Idlewild leases are binding upon defendants; (2) the airlines now are entitled "to use and occupy Idlewild Airport under the terms of the Idlewild leases," and (3) the acts of defendants "are wilful, arbitrary, wrongful, without justification or legal right, in excess of their legal authority, a break of their duties, and are beyond the scope of and not arising out of and contrary to the performance of any governmental functions."

The complaint said action of the Port Authority and the individual defendants in "abrogation and nullification" of the leases had been for the purpose of compelling the airlines "to submit, as a condition of their use or occupancy of Idlewild Airport, to terms and provisions concerning all essential privileges at the airport arbitrarily dictated" by the Port Authority and different from the terms mutually agreed upon and provided in the contracts.

The defendants, it was alleged, have "intentionally, illegally and without justification repudiated, breached and violated" the leases by refusing to give the airlines notice in writing that the initial stage of construction at Idlewild has been completed, in accordance with the contracts. It also was charged that the defendants had demanded that the airlines agree to a "suspension" of the leases and accept a tenure at the airport "under revocable permits issued by them or on other and different terms dictated by them and under a tariff of charges unilaterally established by them."



**Proposed L. A. Airport—** Sketch shows existing facilities at right and plans for new terminal and take-off runways at left. Grading program to take 15 months is now starting. Sepulveda Boulevard, main highway leading to the field, will be tunneled underneath the airport.

The decision of the court was awaited with utmost interest because of the vast importance to the airlines of the outcome. A favorable decision would mean they probably could move into Idlewild under approximately the terms and conditions agreed upon in the contracts they signed with the City in 1945. On the other hand, denial of their petition might mean they would have to deal with the Port Authority on its own terms and conditions.

Parties to the complaint are American, Capital, Eastern, Northwest, Pan American, TWA, United, and American Overseas. Handling the suit is the law firm of Chadbourne, Wallace, Parke & White-side.

## L. A.'s Master Plan

In the ultimate expansion of the Los Angeles Municipal Airport, airplane ground maneuvering will be reduced to a minimum by the unique layout of the landing and take-off runways.

Under the master plan for development of the airport, the two existing runways, one of which will be extended from 6,000 to 10,000 ft. and the other to 7,000 ft., will be used for the landing runways. Terminal facilities are to be constructed adjoining the end of these runways so that an aircraft, after landing, proceeds straight on for a turn right to its gate position with no necessity of reversing itself under any conditions.

Then, for take-off, new runways are to be installed with their leading edges adjacent to the terminal facilities, which will be mid-field, so that again the movement of the aircraft is forward, this time making a turn left into starting position on the runway. The two starting runways are to be 7,000 ft. in length.

If the winds coming in from the ocean—which prevail more than 85% of the time—shift about, the pattern is reversed. Landings will be on the take-

off runways and the take-offs from the landing runways. For those rare occasions when the winds depart from their usual patterns, a cross runway of 6,000 ft. also is to be installed. This will bisect the field, putting it in close position to the terminal facilities, but its use will require reversing of the path of taxiing planes.

**Hills Cut, Valleys Filled.** First step in extending the airport westward where both the terminal facilities and the take-off runways will be located is starting with a 15-month grading program. Nearly 11,000,000 cu. yds. of earth will be graded. A balanced cut and fill plan will be used, according to Clarence Young, general manager of the Los Angeles department of airports. Hills will be cut down and valleys filled to eliminate the more costly operation of hauling or removing excess earth.

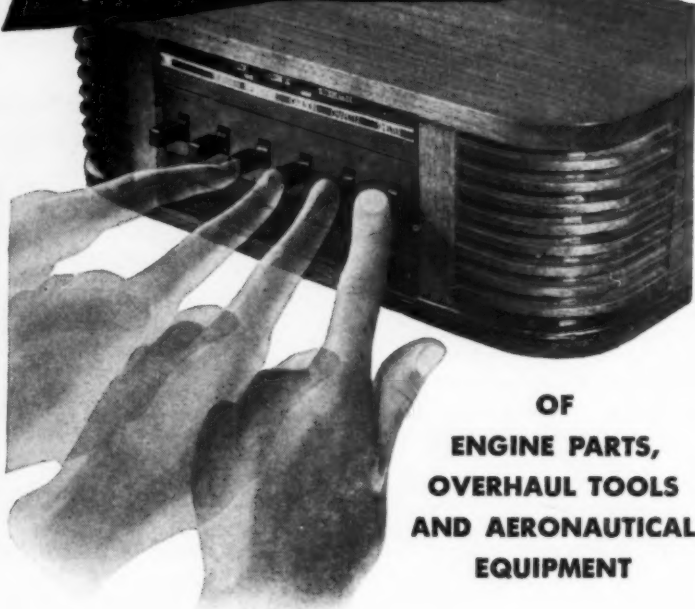
Completion of the grading will involve the relocation of one main highway and the underpassing of another one. Sepulveda Boulevard, a main artery of California's north-south coastal highway system, will be tunneled beneath the airport.

The city of Los Angeles has approximately \$8,000,000 remaining in a bond fund of \$12,000,000 voted for airport improvements. About \$5,500,000 is committed for the grading and the highway work. An additional bond issue will be required to pay the cost of the new take-off runways, the terminal building, and other facilities included in the master plan. This proposal will be submitted to the voters probably this year.

The extended airport, for which all of the land has been acquired, will total 2,518 acres.

**Airport Booklet:** A 42-page illustrated booklet titled "London Airport" is now available from British Information Services, 30 Rockefeller Plaza, New York 20, N. Y., at a price of 35c per copy. Booklet gives detailed description of present facilities and improvements planned for the future.

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## AIR TERMINALS

### Airports Branch Out

A wide variety of non-aviation activities, ranging from barn dances to motorcycle races, are enabling communities all over the country to convert former military surplus airports from "white elephants" to money-makers.

One such field, according to reports compiled by the Civil Aeronautics Administration, which said there are more than 360 of them, is a large Army airfield taken over by the town of Liberal, Kansas (pop. 8,600).

This field was losing money prior to passage of the Surplus Property Act (Public Law 289), which authorized the transfer to the communities of surplus property needed to develop sources of revenue from non-aviation businesses at such airports.

In addition to two flight operators functioning on the field, Liberal now is renting eight former Army warehouses for such purposes as grain storage, an interior decorating firm and a plastics sales concern, and has a waiting list for business locations on the field. Liberal also has a lighted baseball field, a nine-hole golf course and buildings for fairs and other large gatherings, all producing revenue on the airport site.

A motorcycle race track at Santa Barbara Municipal Airport in California yields 10% of the gross operating revenues of the airport, with other revenue coming from a golf driving range and the storage and repair of sailboats.

The former Hunter Field, at Savannah, Ga., is realizing \$50,000 per year in rentals above maintenance expenses at the airport. The seven former mess halls house business ventures from a kindergarten to a pistol range, an awning company operates in the old armaments building, a cold storage company occupies the former "alert crew" shack, and the former guardhouse is utilized as a hospital.

The story is the same in all sections of the country, says CAA. More and more non-aviation revenue producing activities are moving onto airports formerly used exclusively for aviation purposes, and the airport operators are finding that it is good business for them.

### AGA Lights at Albany

As part of a \$1,500,000 improvement program at Albany Municipal Airport, 60 American Gas Accumulator approach lights are being installed at the approach end of the 5000-foot north-south runway. The program also calls for lengthening and widening of existing runways and construction of new ones.

Installation of the new lights, being done by Kennedy Electric Co. of Albany, is expected to eliminate at least 90% of all bad-weather cancellations at this airport.



# Big Four Gain on Railroads

In air transport circles, American Airlines, Eastern, United, and TWA are often called the Big Four. But just how big are the Big Four, as compared with other transportation media? In at least one important respect, that of passenger revenues, the answer is—pretty big.

According to a tabulation compiled by AMERICAN AVIATION from data filed by carriers with the Civil Aeronautics Board and the Interstate Commerce Commission, three of the Big Four airlines in the first nine months of 1948 collected passenger revenues greater than those of all the nation's 131 Class 1 railroads except the giant Pennsylvania and the busy New York Central. And the fourth member of the Big Four—TWA—topped all but five of the rail carriers in passenger revenues for the period.

The big, sprawling Pennsy system was in a class by itself with \$119,177,000 in passenger revenues for the nine-months period, and not too far behind it was the N. Y. Central, with \$98,779,000. Next in one-two-three order and topping all other railroads, including such large ones as the New York, New Haven & Hartford, the Santa Fe, and the Southern Pacific, came three air carriers—American, United and Eastern. Ninth in size of its passenger revenues and surpassing all railroads but the five heretofore mentioned was TWA.

Passenger revenues of the Big Four for the period were: American, \$53,500,014; United, \$48,058,605; Eastern, \$44,407,209, and TWA, \$36,708,814.

**Moving Up.** Comparison with several previous years shows that the Big Four have made substantial gains in their competition with the railroads for dollars spent on transportation in this country.

A tabulation of passenger revenues of leading rail and air carriers for the year 1941 showed only one airline—American—to be in the first 10, ranking 7th in the country. United was in 11th place, Eastern was in 16th and TWA stood 20th on the list. By 1946, American, UAL, EAL and TWA ranked 7th, 8th, 9th and 11th, respectively, and in 1947 their respective places were 3d, 4th, 8th and 10th.

With airline passenger mile volume at about the same level as last year or a little below, the actual gains in passenger revenue volumes of the Big Four could only be attributed to the two fare increases put into effect this year. However, the railroads increased their passenger fares this year, too, so the gains in comparative passenger revenue standings made by the Big Four this year reflected some loss of passenger traffic by the railroads.

Passenger Revenues of Rail And Air Carriers

Carrier	1st 9 months, 1948	12 months, 1947	1947 Rank	1941 Rank
(000 omitted)				
1. Pennsylvania	\$119,177	\$159,327	1	1
2. N. Y. Central	98,779	133,187	2	2
3. AMERICAN	53,500	68,301	3	7
4. UNITED	48,058	56,904	4	11
5. EASTERN	44,407	46,760	8	16
6. N. Y. New Haven	42,885	56,247	5	3
7. Santa Fe	40,510	50,236	6	5
8. So. Pacific	37,324	50,132	7	4
9. TWA	36,708	41,847	10	20
10. Union Pacific	32,900	46,412	9	6

## ADVERTISING

### Ad Campaign Rings Bell

When the advertising agency of Burke Dowling Adams, Inc., submitted to four southern newspapers copy for a Delta Air Lines ad to be run in their Dec. 7 issues, the advertising managers of the papers wondered at the copy instructions. What they were asked to do had never been done, so far as any of them knew, but all agreed there was no good reason why it couldn't be done.

Accordingly, the Dec. 7 issues of the *Atlanta Constitution*, the *Miami Beach Sun*, the *Miami Daily News* and the *Jacksonville Journal* came out with a Delta ad "underprinted" in light blue

ink across the entire top half of their financial pages. Stock market quotations were printed on top of the Delta message, which heralded the line's new DC-6 service to Chicago, but because the sales message was in color and in big block letters, it stood out like a highway billboard without interfering with the legibility of the regular printed matter on the page.

Here was something new, a double use of space, a case of having your cake and eating it, too. Newspapers across the nation featured descriptions of it, calling it the first new idea in advertising in many years. National magazines, such as *Time*, as well as all printing and publishing magazines carried feature stories on the double-printing idea. Foreign newspapers, especially in nations where newsprint is scarce, asked their U. S. representatives for copies and for information.

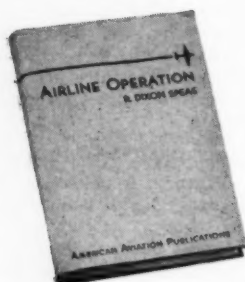
**Available to All.** The original idea for the ad came from B. D. Adams, president and general manager of the advertising agency bearing his name, but he promptly declined to attempt any commercial exploitation of the idea. Instead, on the day the first ad appeared, he announced that so far as he was concerned the idea was public property and might be used by anyone who wished to do so. He pointed out that it could be used equally well on want-ad pages or any pages containing solid masses of reading matter and could be adopted by any newspaper or any advertiser liking the idea.

Adams was naturally proud of the hit the "underprint" ads made, but he was no less proud of the entire advertising campaign of which this was but one component. Although worked on a modest budget, the campaign introducing Delta's DC-6's was one of the most

B. D. ADAMS' innovation of underprinting Delta's DC-6 message across entire top half of newspaper financial pages created sensation in advertising world as brightest new idea in many a year.

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### TRAFFIC & SALES

thorough and extensive ever created by any airline.

With national magazines, newspapers, radio, television, outdoor billboards, window displays, posters and direct mail, and with dozens of promotional items ranging from postage meter imprints on envelopes to five-foot signs on automobile bumpers, Delta told the story of its new "300 Plus" fleet of DC-6's.

The "300 Plus" theme was worked out by Delta officials together with the advertising agency, and the campaign was supervised by Laigh C. Parker, vice president of traffic, and James H. Cobb, Jr., advertising and public relations manager of the airline.

**Pre-Service Campaign.** The campaign opened in October with the first of a series of two-color ads published in *Time* magazine. Pre-service announcements also ran in trade publications.

On Tuesday, Nov. 3, newspaper campaigns in all the cities to be served by the DC-6's announced the new fleet. In Chicago, Delta used a full-page in four colors in the *Chicago Tribune*, the first use by any airline of a four-color, full-page ad. In Cincinnati, Jacksonville and Miami, the announcement ads were 1,250 lines in two colors.

Teaser campaigns preceded these announcements for three days. In the Sunday papers, four separate small ads were used in one edition, all without a signature, to stimulate interest in "300 Plus." Teasers of a similar type ran on Monday, and on the day of the announcement small space units were used and listed the actual page on which the large ad appeared. The day before the service opened, Delta used 600-line space to announce detailed flight times and schedules.

Simultaneously with the newspaper campaign, Delta began selling the "300 Plus" fleet with radio, television and 24-sheet outdoor posters, plus painted billboards in two cities. In so far as possible, December schedules were arranged so that DC-3 or DC-4 flights connected with the DC-6's for faster flight times on long trips, and large ads featuring the theme of schedules "geared to save you time" were used in all cities with DC-3 and DC-4 service.

**Other Media.** Television is being used in Chicago, Cincinnati and Atlanta, only DAL cities with TV stations at present. Commercials used show the roominess of the Sky Lounge, the comfort and width of the seats, and meals and other service in flight. Animated maps indicate the non-stops offered, and another commercial sells the Florida service with a round-up of scenes of tropical vacation spots.

For use on the planes and by traffic offices, post cards were made from Kodachrome transparencies showing the DC-6 in flight and the Sky Lounge with six passengers in it. A four-color brochure was produced both as a mailer and for

individual distribution. Lithographs approximately 16 x 11 inches in size were printed in four colors for traffic office distribution. Special license plates reading "Now Fly Delta DC-6's" were made up for all DAL employees' automobiles, decals featuring the DC-6 went on windshields, and buttons featuring the fleet were worn on the lapels of employees.

Other displays, featuring a cut-out view of the DC-6, were made up for ticket office windows. Travel agents and all ticket offices received 22" x 28" posters in four colors, featuring the Sky Lounge, non-stop flight to Miami, and the attraction of Florida for winter vacations. And a direct mail campaign in route cities accompanied the other promotions, with mailings approximately a week apart.

Delta's DC-6 service began in December between Chicago, Cincinnati, Atlanta, Jacksonville and Miami, while service from Atlanta to New Orleans and Dallas was to begin Jan. 4. The advertising campaign will continue into February at some route points.

**Everyone Gains:** Pan American Airways is setting up a unique interline traffic promotion for Honolulu business. It has obtained approval from Western Air Lines to fly Western's stewardesses, two at a time, to Honolulu for five-day Hawaiian Island familiarization trips. Harvey Hancock, Pacific-Alaska Division traffic director, thinks stewardesses do a top job of selling air travel and the more familiar they are with connecting routes the more traffic they'll generate both for the connecting routes and their own line.

### NEW SERVICES

**Colonial Airlines** has made arrangements with Wheeler Airlines, Canadian feeder, to connect with Colonial flights at Montreal and take ski passengers on to St. Jovite.

**Eastern Air Lines** has set Feb. 1 for inaugurating scheduled service to Rome, Ga., with initial service of one northbound and one southbound flight daily.

**Trans World Airline** was to begin serving Zurich, Switzerland, on Jan. 1.

**NWA's Coach Service:** Northwest Airlines hopes to start coach-type, reduced rate service between Minneapolis-St. Paul and Washington, via Milwaukee, Detroit, Cleveland, and Pittsburgh, on Jan. 8. Fare would be about 4c per mile, with flights originating at each terminal about midnight.

**PAA Sleeperettes:** Pan American Airways on Jan. 1 started providing "Sleeperette" seats on its New York-Buenos Aires run at no extra charge to passengers, despite fact that passenger capacity of the DC-4's is reduced from 52 to 30 to make room for the new stretch-out seats.

# 1948 Good Year for Plane Makers; '49 to be Better

The year 1948 brought a modest profit to most aircraft manufacturers and was the best year since the end of the war. However, in no case did the profit made in 1948 approach the losses sustained during 1946 and 1947. Such are the chief conclusions of Oliver P. Echols, president of Aircraft Industries Association, in his year-end report.

Gen. Echols estimates that the total sales of the 15 major companies will reach about \$1,100,000,000 in 1948, compared to the 1947 total of \$848,000,000. This estimate is based on production data for the first nine months of 1948, the latest available.

Production of military aircraft was largely responsible for the profits, although the new expansion programs of the Air Force and Navy have not yet influenced production. Military units produced in 1948 will probably total in the neighborhood of 2,300. This compares to 2,102 units built in 1947 and 1,330 in 1946. However, the gain in airframe weight is even greater, since 500 small liaison planes were produced in 1947, while only slightly more than 100 are included in the 1948 total.

Airline transport aircraft and executive plane production fell off slightly during 1948. About 170 commercial transports were built in 1948, plus an additional 70 twin-engined executive planes. This compares with approximately 280 commercial and executive units turned out in 1947.

**7,300 Personal Planes.** Based on production for the first nine months, personal plane manufacturers will probably manufacture about 7,300 planes in 1948, which is less than half last year's total. However, a far larger proportion of the 1948 production consisted of four-passenger types, while the 1947 output was mostly two-passenger sales.

Aircraft Industries Association has no official data on helicopter production, but it estimates that about 200 rotary-wing aircraft, for both military and commercial use, were built.

The introduction of radical new aircraft designs and the necessity for re-tooling of plants for production quantities of these planes required in the Air Force and Navy expansion programs presented the industry with a number of problems. The new plane types, which are becoming more and more complex, have stepped up the demand for engineering talent, of which there is already a noticeable shortage. The new planes also require more skilled labor, and training and retraining programs are required to provide the labor force needed.

Techniques of manufacture have been

greatly improved, permitting stepped-up production rates and reduced costs. Several closed or partially-open plants have been re-opened and re-tooled, and, in one case, the entire factory was shifted from a coastal location to an inland point.

**Depends on Military.** The outlook for 1949, according to Gen. Echols, hinges on the military picture, and since there is some uncertainty over the fate of military procurement it is difficult to predict the immediate future of the aircraft industry. President Truman has stated that he intends to hold the defense budget down to \$15,000,000,000. If Congress concurs, the procurement programs of both services will be seriously impaired.

If the expansion programs are permitted to continue at their present rate, production of military aircraft during 1949 may be expected to exceed 3,000 planes, with a proportionate increase in airframe weight. This would practically assure the industry of a successful year.

Transport production should remain at present levels during 1949. Approximately 135 transports should be delivered, according to present orders, and a contingent production of between 40 and 100 aircraft is indicated. Production of personal plane sales is difficult to forecast, since it depends on a number of variable conditions. However, assuming that business conditions remain approximately the same in 1949 as they were in 1948, there is reason to believe that 1949 personal plane deliveries will be higher than this year's.

To sum it up, 1948 was a fairly good year for the aircraft manufacturing industry, but 1949 stands a good chance of being a better one.

## Cost Agreement Reached

After seven months of argument, the National Military Establishment has finally completed its "Statement of Contract Cost Principles," which tells manufacturers what items are legally chargeable to a contract with one of the armed services.

The document, which went through six drafts, has been in preparation since last May, when the old War Powers Act expired and it became necessary to develop a new set of contract regulations. The reason for the delay was the fact that every outside interest—trade associations, bankers, insurance executives, publishers, labor advisors, etc.—tried to "pressure" the drafters into inserting a particular clause favorable to its own group.

Manufacturers have been looking for-

ward eagerly to the completion of the principles of cost, since without them no firm contract could be signed. They had been forced to start work on plane production for the Air Force and Navy, on contracts totaling more than \$2,000,000,000, without firm contracts.

The cost principles guide, known officially as Section XV of the Armed Services Procurement Regulation, becomes mandatory in all contracts executed after Feb. 1, 1949, although it may be applied to contracts executed sooner. Four major items not previously allowable in computing contract costs are now permissible: state income taxes, use and occupancy insurance, ordinary local charity and community benefit donations, and charges for depreciation may now be charged to government contracts.

**Advertising Rule.** One of the biggest battles in drafting the regulation was on the question of whether manufacturers should be permitted to advertise extensively and charge it to the government. The final compromise states that help wanted advertising, advertising in connection with the disposition of scrap and other waste materials, and advertising in trade and technical publications will be allowed, but all other advertising is at the expense of the contractor, and may not be admitted as a legitimate cost in connection with a production or research contract.

Another subject of discussion during the drafting of the regulation was whether compensation of company executives should be charged to a contract, and to what extent. The final draft makes such compensation allowable, although it warns that the compensation of an individual is subject to review.

On a number of costs, the guide leaves open the question of whether they are allowable. Examples include costs incurred in anticipation of a contract, re-arrangement or relocation of facilities or plant sites, special security measures and personnel movement.

## Non-Aviation Products Pay

An interesting trend in the aircraft manufacturing industry is the fact that some companies, not fortunate enough to get military expansion contracts, have turned to the manufacture of non-aviation products. A good example of the influence non-aviation sales are now exerting on aircraft companies is found in the annual report of Cessna Aircraft Co., whose total sales volume in 1948 increased 33.5% over 1947 sales although sales of airplanes and aircraft products fell off 32%. Cessna's non-aviation sales during fiscal 1948 actually exceeded aircraft sales by almost \$50,000. Total aircraft sales were \$7,124,586; non-aviation sales amounted to \$7,170,635.

Since Cessna's net income for the 1948 fiscal year was \$552,898, it is quite possible that the company might have gone into the red if it had not been for its non-aviation sales.



## U. S. Domestic Airline Revenues & Expenses for July-September

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
American	\$ 24,796,304	\$ 21,589,400	\$ 1,280,412	\$ 452,319	\$ 1,112,992	\$ 214,168	\$ 69,059	\$ 23,450,577	\$ 11,510,715	\$ 11,939,862	\$ 1,345,727
Braniff	4,268,762	2,852,129	1,217,845	61,254	70,995	26,540	35,018	3,299,458	1,586,767	1,712,691	969,304
Capital	5,931,501	4,479,723	721,559	148,004	309,029	28,316	77,303	5,773,364	2,612,526	3,160,838	158,137
Caribbean	161,818	107,168	46,439	5,113	697	1,585	1,585	146,750	67,961	80,789	13,068
C & S	2,215,666	1,619,743	479,291	49,210	35,374	16,763	5,644	2,053,616	915,971	1,137,645	162,049
Colonial	1,148,081	817,308	312,186	5,159	5,268	7,672	669	912,498	388,917	523,580	235,583
Continental	1,360,139	960,302	339,311	9,759	16,197	7,822	9,489	1,162,620	499,446	663,174	197,519
Delta	3,433,963	2,494,289	751,310	62,825	93,668	26,040	5,395	3,268,040	1,478,489	1,790,350	165,123
Eastern	14,104,303	12,900,436	451,060	236,241	306,463	167,465	6,212	14,334,257	7,620,401	6,713,856	-229,954
Hawaiian	1,231,171	1,080,282	5,966	31,077	77,448	29,416	6,228	1,043,587	448,044	595,543	187,584
Inland	624,312	461,386	143,468	5,124	5,496	3,957	...	912,730	225,610	291,620	107,082
MCA	1,802,310	1,500,040	243,336	17,702	18,694	12,382	6,816	1,775,082	785,530	989,553	27,228
National	1,649,037	1,390,816	176,815	17,244	22,787	26,796	600	2,484,560	1,377,886	1,106,674	-835,522
Northeast	1,426,023	1,200,135	190,283	10,318	18,503	6,763	650	1,371,542	663,385	708,157	54,481
Northwest	6,652,539	5,916,800	359,285	152,199	152,017	48,622	10,854	7,264,431	3,482,390	3,782,041	-611,892
TWA	15,700,812	13,378,639	1,087,712	452,462	489,052	163,318	53,232	15,825,114	7,519,266	8,305,848	-124,302
United	23,593,942	20,334,323	1,392,653	576,068	907,794	200,843	46,825	22,709,597	9,878,987	12,830,610	884,344
Western	2,063,753	1,783,781	118,978	26,511	97,392	14,604	29,958	2,199,476	918,095	1,281,381	-135,722
TOTALS	112,124,436	94,866,700	9,317,909	2,313,436	3,684,282	1,002,184	365,537	109,594,599	51,980,386	57,614,212	2,569,837

NOTE: Under CAB filing procedures, the airlines file a cumulative quarterly financial report for July-September in place of a separate statement for the month of September. Traffic data, however, are reported separately for each month.

## U. S. Feeder Airline Revenues & Expenses for July-September

AIRLINES	TOTAL OPERATING REVENUES	PASSENGER REVENUES	MAIL REVENUES	EXPRESS REVENUES	FREIGHT REVENUES	EXCESS BAGGAGE REVENUES	NON-SCHEDULED TRANSPORT REV.	TOTAL OPERATING EXPENSES	AIRCRAFT OPERATING EXPENSES	GROUND & INDIRECT EXPENSES	NET OPERATING INCOME
All American	\$ 263,986	\$ ...	\$ 259,936	\$ 3,760	\$ ...	\$ ...	\$ ...	\$ 266,976	\$ 146,089	\$ 122,888	\$ -4,990
Challenger	392,284	167,589*	221,107	750	3,003	537	...	345,910	154,523	191,387	46,373
Empire	684,425	684,875	612,917	746	...	354	2,313	214,116	179,230	174,686	479,399
Florida	349,341	31,315	325,954	231	...	106	392	184,697	97,342	87,355	164,644
Monarch	152,774	132,269	205,379	1,938	6,271	641	1,515	393,711	216,146	177,563	-40,937
Piedmont	559,424	216,105	337,520	2,214	1,460	1,625	...	493,944	296,240	197,703	65,480
Pioneer	864,296	378,829	448,693	2,109	3,713	2,273	4,676	767,693	416,975	350,717	96,603
Southwest	679,285	311,133	354,840	3,372	6,243	1,516	1,853	617,696	318,046	299,640	61,588
Trans-Texas	400,447	87,447	312,078	-226	914	165	...	429,573	242,759	186,815	-29,126
West Coast	309,366	187,093	121,158	1,502	...	505	425	349,707	171,931	177,776	-40,341
Wis. Central	264,501	52,263	208,935	2,445	...	411	...	245,915	128,847	117,068	18,586
TOTALS	5,120,129	1,618,518	3,409,517	18,843	21,604	8,133	11,174	4,311,938	2,298,130	2,013,808	898,189
Los Angeles	96,715	...	96,715	...	...	...	...	91,048	60,512	30,537	5,667
Final Figures for Challenger Airlines, Quarters Ending											
March, 1948	211,271	34,067	174,463	1,086	1,512	124	...	251,182	123,238	127,944	-39,912
June, 1948	264,991	18,556*	242,166	1,83	2,318	254	65	236,132	156,296	139,840	-33,145

\* Includes revenue from May and June, 1948.  
\*\* Does not include May and June, 1948 revenue.

## U. S. Feeder Airline Traffic for October

AIRLINES	REVENUE PASSENGERS	REVENUE PASSENGER MILES	AVAILABLE SEAT MILES	PASSENGER LOAD FACTOR	MAIL TON-MILES	EXPRESS TON-MILES	FREIGHT TON-MILES	TOTAL TON-MILES	REV. TRAFFIC	AVAILABLE TON-MILES FLOWN	% AVAILABLE TON-MILES USED	REVENUE PLANE MILES	SCHEDULED MILES	% SCHEDULED MILES COMPLETED
All American	.....	.....	2,343,000	.....	3,780	3,372	.....	7,152	29,415	24.31	145,872	160,056	91.14	
Challenger	1,779	445,000	1,952,000	18.99	3,046	2,642	3,840	54,273	250,748	21.64	117,172	125,767	93.17	
Empire	2,386	537,000	1,952,000	31.10	1,942	648	.....	52,196	148,436	35.16	92,599	87,916	99.25	
Florida	1,100	147,000	551,000	26.68	602	250	.....	14,941	59,715	25.02	68,286	68,856	99.11	
Monarch	2,296	564,000	2,687,000	21.01	2,447	1,314	11,095	71,562	31.39	151,733	156,085	95.62		
Piedmont	5,032	1,311,000	4,048,000	27.94	2,266	2,182	3,017	115,726	372,978	31.03	191,585	197,656	96.67	
Pioneer	10,478	2,928,000	8,422,000	34.77	8,289	2,109	4,772	271,711	901,366	30.14	351,350	343,432	99.75	
Robinson**	2,329	343,000	927,000	37.00	999	.....	1,048	31,280	95,523	32.75	44,142	40,724	86.45	
Southwest	9,221	1,693,000	4,980,000	34.00	4,136	3,007	7,237	184,157	436,245	42.21	207,443	214,475	96.40	
Trans-Texas	2,934	716,000	4,079,000	17.56	4,907	799	1,088	72,029	352,090	20.46	194,184	194,184	100.00	
West Coast	5,016	635,000	2,065,000	30.75	664	733	.....	57,845	207,350	27.89	107,883	118,234	90.99	
Wis. Central	1,467	241,000	870,000	27.75	1,482	2,305	.....	26,409	92,573	28.53	99,033	126,201	78.47	
TOTALS	44,038	9,380,000	32,923,000	28.48	34,560	19,361	32,097	959,281	2,946,439	30.12	1,771,222	1,842,586	95.05	
Helicopter Mail Service														
Los Angeles	.....	.....	.....	.....	2,977	.....	.....	2,977	12,198	24.41	26,691	30,212	87.25	
* Figure not yet available.														
** Robinson Airlines began operations September 13, 1948. Figures for month of September are as follows:														
	700	110,000	348,000	31.61	395	.....	196	9,998	35,849	27.89	16,466	18,800	87.88	

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### 9-C47-A's

Total Time From 1200 to 5600  
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All equipped with P&W 1830-92  
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**F. C. JONES, PHILIPPINE AIR  
LINES, INC.**

212 Stockton St., San Francisco, Calif.  
Cables: "Paline San Francisco"  
Phone: Douglas 2-1688

or

**PHILIPPINE AIR LINES, INC.**

Makati Airport, Manila, P. I.  
Cables: "Paline, Manila"

## Classified Advertising

The rates for advertising in this section are as follows: "Help Wanted," "Positions Wanted," "Aircraft Wanted or For Sale," and all other classifications \$1.00 a line, minimum charge \$4.00. Estimate bold face heads 30 letters and spaces per line; light body face 40 per line; box numbers add two lines. Terms, cash with order. Forms close 20 days preceding publication date. Rates for display advertisements upon request. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1025 Vermont Avenue, NW., Washington 5, D. C.

### FOR SALE

**AIRPLANE**—Lockheed 12 twin motor. Executive deluxe interior, seating 4 passengers and crew of 2. Extra gas tank; Bendix RTA 1C Transmitter/Receiver; ship-to-shore telephone; Bendix RA10 Receiver; Bendix M N 28ADF; Bendix Marker Receiver; ARC Type 15 Omni-Directional Receiver; Type 11 VHF Transmitter/Range Receiver; Glide Path Receiver; Hughes Obstacle Warning Radar. Many extras, tools, and miscellaneous equipment. Armstrong Cork Company, Traffic Department, Lancaster, Pa.

### HELP WANTED

Design Engineers with Experience in Aircraft Fuel & Hydraulic Systems. Good Opportunity for Advancement with Small Company. Salary within Accordance with Training & Experience. Give Full Information in Letter to General Manager, Aero Supply Mfg. Co., Inc., Corry, Penna.

### POSITIONS WANTED

**GRADUATE ACCOUNTANT**, age 30, presently employed in staff capacity by major airline, interested in connection with U. S. or foreign carrier where past experience in administration of line accounting functions can be effectively utilized. Thorough knowledge air transport budgetary, statistical and accounting requirements and procedures. Will accept foreign assignment. Excellent references. Box 641, AMERICAN AVIATION, 1025 Vermont Avenue, N. W., Washington 5, D. C.

**POSITION WANTED BY AIRLINE CAPTAIN**—FLYING AND EXECUTIVE ABILITY. Age 34, marr.ed. 4½ years North Atlantic. Now flying scheduled domestic. 2 years aeronautical engineering. Ratings 1000-7200 H. P. Total flying time 6,000 hours. Thoroughly reliable, neat appearance. Wishes to make connections where experience and ability can be more thoroughly utilized. Best references furnished. Airline Captain, 231 E. 76th St., Apt. 1 G, New York.

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## ENGINEERING DRAFTSMEN ENGINEERING DESIGNERS AERODYNAMICISTS



The nation's fastest expanding industrial area has immediate openings and excellent opportunities in world's finest aircraft plant. Personnel will be used for research and development work on B-36, world's largest bomber, and other advanced Air Force designs. Positions are also available for tooling personnel.

Write for application blank to

Engineering Personnel Office

**CONSOLIDATED VULTEE AIRCRAFT CORPORATION**  
FORT WORTH DIVISION

## WORLD'S PREMIER AIRPLANE FABRIC

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**FLIGHTEX**

FLIGHTEX FABRICS, INC. • 93 WORTH ST. • NEW YORK 13, N. Y.

Leading Manufacturers of  
Fabric and Tapes for the  
Aircraft Industry.

**FLIGHTEX FABRIC**

Export Representative  
AVIQUIPO, Inc.  
25 Beaver Street, N. Y.  
Cable Add: Aviquip

# WINGS OF YESTERDAY

## 25 Years Ago

The world's greatest aerial photographic mapping project, covering Greater New York, was near completion by the Fairchild Aerial Camera Corp. of New York.

NAA announced that Wilbur Wright Field, Dayton, O. would be the site for the 1924 International Air Races.

## 10 Years Ago

(In AMERICAN AVIATION)

Domestic air mail service during the fiscal year ended June 30, 1938 showed a profit of \$736,953, with revenues to the Post Office Dept. climbing to \$15,301,210, while payments to contractors were approximately \$14,564,256.

The Civil Aeronautics Authority on December 18, 1938, announced the creation of an economic compliance division which was to act as advocate or prosecutor on behalf of the public interest in all economic regulatory cases heard before the Authority and its trial examiners.

# LETTERS

## Air-Sea Brotherhood

To the Editor:

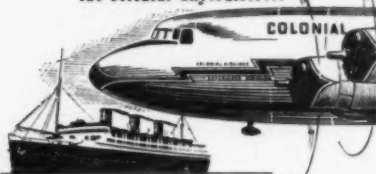
I wonder if you happened to see the attached sheet (see cut) from the Resort Section of the New York Times, Sunday, Dec. 12? The large Colonial Airlines' advertisement extending a cordial word of greeting to the Queen of Bermuda and offering travel agents and the public full cooperation for Air-Sea travel to and from Bermuda is, I believe, unique in the history of airline advertising.

I might say that this advertisement was a complete surprise to our clients, the FURNESS-BERMUDA line, and ourselves. It was to me particularly surprising in view of my many years' close connection with

COLONIAL and the QUEEN...

two craft that speak as one  
**..Bermuda**

the Colonial Skycruiser...



the Queen of Bermuda... Each

the ultimate  
in luxury transportation between  
New York and Bermuda—

your travel agent will be glad to arrange for you to

Fly Colonial and return on the Queen

or Sail on the Queen and return via Colonial.

Colonial Skycruiser  
Daily from New York  
Twice Weekly from Washington  
\$125 ROUND TRIP, ALL TAXES

Queen of Bermuda  
Weekly Sailings  
Saturdays from New York  
\$125 UP ROUND TRIP, ALL TAXES

**COLONIAL AIRLINES**

CHICAGO • D.C. • BERMUDA

SEND FOR FREE BOOKLETS  
Bermuda to Bermuda, Colonial Airlines, Dept. 17, 420 Fifth Avenue, New York 7, N.Y.  
Sail to the Queen, Bermuda Lines, Dept. 17, 34 Broadway Street, New York 4, N.Y.

airlines during which I have come to assume that "AIR and SEA—Never the Twain Shall Meet"—this in spite of the fact that it seems obvious that only by means of full cooperation between the two forms of transportation, offering unlimited Air-Sea transportation agreements with either surface or air carriers, will it be possible to develop the potential overseas travel market.

Admitting that temporary conditions on the Atlantic may have warped the vision of principals in both modes of transportation, it would still appear evident that fundamentally the interests of both groups can best be obtained in the long run by joint efforts to stimulate travel. It seems to me that this unique gesture on the part of Colonial Airlines is indicative of a very forward-looking attitude on their part and it occurred to me that if you agree in principle with this thinking you might consider this subject worthy of calling to the attention of your readers.

I cannot but believe that in due time we will see a lot of hatchets buried and that the day will come when an advertisement of this sort will be routine, instead of exceptional.

ALEX MOSSMAN

Wendell P. Colton Co.

New York City

## Looking at the Record

To the Editor:

I have just read with a great deal of interest, page 18 of your current issue,

entitled "Air Travel—1919 Version."

I was delighted to see that my old friend, Bellchambers, is still very much on the job. We used to get into each other's hair back in 1919-20, all friendly of course, but we were just a couple of pioneers trying to make good.

The purpose of this letter is not to take credit away from Aero Limited and the hard work that Bellchambers' boss, Harry Rogers, did in the early pioneering days. They had a small operation and did a very good job but I cannot let their "first" go by without a loud and resounding challenge.

The best reference of what happened in those days, of course, is the Aircraft Year Book, which was published then by the Manufacturers Aircraft Association, and also a book written by a gent named Bruno, called *Wings Over America*. In this latter volume you will find a chapter called "Aeromarine" beginning on page 108 and finishing on page 122.

Aero Limited was a small operation whereas Aeromarine was a well financed (the finances didn't last more than three years) organization with a lot of equipment. The first scheduled air passenger routes in America and also the first international mail and passenger routes were Aeromarine. Aero Limited got started ahead of Aeromarine in 1919 but their operations were on a "when, as and if" basis.

I am sure all the ex-Navy pilots who flew as we did the converted Navy HS2L flying boats, will be amazed at reading the following which appears in your article:—"All of this at the breath-taking speed of 85 miles per hour in a converted Navy six-passenger flying boat with range of 575 miles, with the power supplied by two 400 hp Liberty Motors." I have yet to see an HS2L with two Liberty engines. You must be referring to the FSLs of which Aeromarine had a lot and I don't believe Aero Limited had any.

I salute the pioneering spirit of Aero Limited and the enthusiasm of Bellchambers but, for the record, let's consult the books I have mentioned above.

HARRY BRUNO

H. A. Bruno Associates  
New York City

(Editor's Note: Mr. Bruno is most assuredly correct about the Navy HS2L, having one engine. AMERICAN AVIATION asked CAA about the power of this famed flying boat and was informed that it had two engines. And all credit to the much bigger Aeromarine in which Bruno played an important role and which he describes in detail in his illuminating "Wings Over America.")

## EAL's Profit

To the Editor:

There appears to be an error in the tabulation accompanying your article in the Dec. 1, 1948 issue of AMERICAN AVIATION at page 9.

It is stated in that tabulation that Eastern had a profit of \$1,683,202 in July and August, 1948. Actually, Eastern had an operating loss of \$303,167 in July and August, 1948 and its profit for the first eight months of 1948 was \$1,683,202 (after taxes for first six months only) and not \$3,689,571 as stated in your article.

J. W. MOORE

Asst. Secretary and Asst. Treasurer  
Eastern Air Lines  
New York

(Editor's Note: Our office typewriters have fallen into the habit of crediting Eastern with profits, even when it doesn't make them. Mr. Moore is correct; it was a copying error. The \$1,683,202 figure which appeared in the second column of the tabulation referred to should have been in the first or nine-months column. Effect was to more than compound EAL's profit, which needed no embellishment to make it look good. Net loss of the 18 domestic trunklines for the nine-months period, therefore, actually was over \$14 millions instead of \$12,347,273. We're glad to have this inadvertence straightened out, but hate to see Eastern lose so much money so fast.)

WORLD-WIDE distributors of multi-engine transport type aircraft, engines, their components and accessories. Agent for WAR ASSETS ADMINISTRATION. Write, wire or telephone your requirements.



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West Coast Office: Oakland Municipal Airport, Oakland, California

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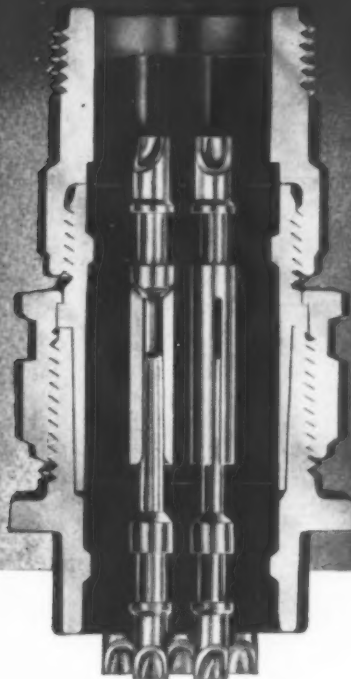


# BENDIX-SCINTILLA

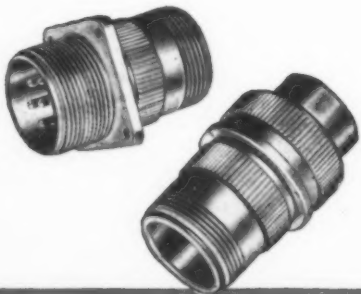
## ELECTRICAL CONNECTORS

*these are the features*

- Light Weight
- High Arc Resistance
- Easy Assembly and Disassembly
- Fewer Parts than any other Connector
- Contacts filled with high-grade solder to insure top performance



*Plus this Important Advantage—*  
**PRACTICALLY NO VOLTAGE DROP!**



Contacts that carry maximum currents with a minimum voltage drop are only part of the many new advantages you get with Bendix-Scintilla® Electrical Connectors. The use of "Scinflex" dielectric material, an exclusive new Bendix-Scintilla development of outstanding stability, increases resistance to flashover and creepage. In temperature extremes, from  $-67^{\circ}$  F. to  $+300^{\circ}$  F., performance is remarkable. Dielectric strength is never less than 300 volts per mil. Bendix-Scintilla Connectors have fewer parts than any other connector on the market—and that means lower maintenance costs and better performance.

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*Available in all Standard A.N. Contact Configurations.  
Write our Sales Department for detailed information.*

**BENDIX  
SCINTILLA**

**SCINTILLA MAGNETO DIVISION of**  
SIDNEY, NEW YORK





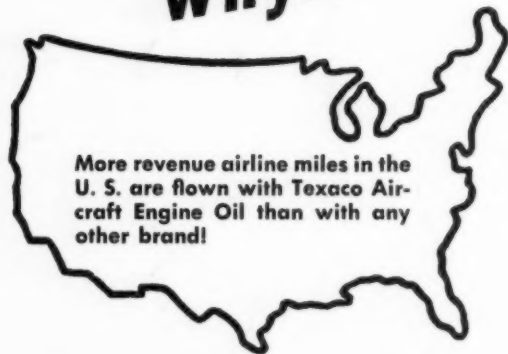


Trans-Texas Airways, largest certificated feeder carrier in the country operating within one state, connects over thirty (30) Texas communities and six (6) Mexican border points with the nation's major domestic and international carriers. Passengers, mail, parcel post

and freight are being flown in steadily increasing volume. Hitherto isolated regions of vast Texas are now only hours away from the country's great markets. From its very first run, Trans-Texas Airways has used Texaco Aviation lubricants and fuels exclusively.

# Reduced maintenance cost

is one  
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why...



TEXACO's simplified lubrication plan — used by airlines everywhere — can help reduce your maintenance costs . . . simplify maintenance procedure . . . assure maximum efficiency in aircraft operation. The plan is flexible, but most airlines using it find they can take care of all their lubrication jobs with *only seven* Texaco lubricants.

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FOR THE AVIATION INDUSTRY

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